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ABSTRACT

Articles in this issue vary widely in method, content, and sample size, but come together to produce a valuable collection of knowledge about education in the Pacific Basin, with emphasis on issues of under-representation. The articles are: (1) "Effects of a Culturally Competent School-Based Intervention for At-Risk Hawaiian Students" (Douglas C. Smith, David W. Leake, and Noelani Kamekona); (2) "Creating Local Norms To Evaluate Students in a Norm-Referenced Statewide Testing Program" (Sarah S. Gronna, Amelia A. Jenkins, and Selvin A. Chin-Chance); (3) "Pacific Islanders in Higher Education: Barriers to Recruitment and Retention" (Anna L. F. Ah Sam and Nancy B. Robinson); (4) "Tutoring Southeast Asian Students at a Social Service Site" (Marjorie A. Jaasma and Linda S. Center-Anthony); and (5) "Ka Lama o ke Kaiaulu: Research on Teacher Education for a Hawaiian Community" (Kathryn H. Au and Margaret J. Maaka). Each article contains references. (SLD)

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Artist Byron Inouye created the journal logo. He combined Asian and Pacific themes using a design element to create a lotus blossom. The waving pages beneath the blossom symbolize academic scholarship and also call forth the Pacific Ocean. The opening lotus is symbolic of a new beginning for the journal.

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The *Pacific Educational Research Journal* is published annually and features theoretical, empirical, and applied research with implications for and relevance to education in the Pacific area.

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CONTENTS

Editors' Notes 1

Effects of a Culturally Competent School-Based Intervention for At-Risk Hawaiian Students 3
Douglas C. Smith, David W. Leake, and Noelani Kamekona

Creating Local Norms to Evaluate Students in a Norm-Referenced Statewide Testing Program 17
Sarah S. Gronna, Amelia A. Jenkins, and Selvin A. Chin-Chance

Pacific Islanders in Higher Education: Barriers to Recruitment and Retention 39
Anna L. F. Ah Sam and Nancy B. Robinson

Tutoring Southeast Asian Students at a Social Service Site 51
Marjorie A. Jaasma and Linda S. Center-Anthony

Ka Lama o ke Kaiāulu: Research on Teacher Education for a Hawaiian Community 65
Kathryn H. Au and Margaret J. Maaka

Information for Contributors 87

Editors' Notes

Buoyed by the very positive reception of Volume 8 of the *Pacific Educational Research Journal (PERJ)*, our editorial team began the task of producing Volume 9. Alas, a complex set of circumstances resulted in our being notably less able to meet our preferred publication timeline. But as we pored over manuscripts that came in as researchers learned of the existence of *PERJ*, we were pleased by the variety and value of work done in and about the Pacific area.

For Volume 9 of the *Pacific Educational Research Journal* we have a set of articles that vary widely in their method, content, and sample size but come together to produce a valuable collection of knowledge about education in the Pacific Basin, and particularly about addressing the problem of underrepresentation.

This variety and value nicely reflect the stated scope and purpose of the journal. While the focus of the articles herein is the Pacific Basin, their contributions to the educational literature exceed their geography.

In the first article, Smith, Leake, and Kamekona directly address the effects of a culturally based intervention for at-risk Native Hawaiian students. Using a diverse set of data-collection instruments, they gathered data that, while crucial to determining how one might appropriately factor in culture in addressing at-risk Hawaiian students, certainly apply to at-risk students from other underrepresented cultures as well.

In the Gronna, Jenkins, and Chin-Chance article, we learn about the desirability as well as the complexity of developing local norms. The resulting norms not only enhance our understanding of the achievement of Hawai'i's students, but they also lead to ideas about additional research that would not be possible without those local norms.

Ah Sam and Robinson provide information on populations about whom there has been relatively little research published. By giving us quantitative and qualitative information on various Pacific Island groups, we can start developing better ways to support Pacific Islanders studying in America, and we can at the same time learn about supporting all newcomers to higher education.

Jaasma and Center-Anthony provide insight into areas for which research does not have a long-standing history. Such insight is much needed as immigrants from Southeast Asia continue to be a sizable presence in our schools today.

The Au and Maaka article provides insight into the experiences of Hawaiian pre-service teachers. That insight should lead to better understanding about how to address the underrepresentation of Hawaiians in the teaching profession and at the same time promote better understanding of educational equity and staff development in general.

By addressing the problems that immigrants and other underrepresented persons face in educational settings, the authors in this volume of *PERJ* have made contributions to the education of all learners, for in many ways, all students are immigrants moving to new educational environments. We invite the reader to participate in the effort to improve the educational opportunities for underrepresented persons by making use of the information in this journal.

Me ke aloha pumehana
(with warm aloha)

Kathleen F. Berg
Morris K. Lai
Editors

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Effects of a Culturally Competent School-Based Intervention for At-Risk Hawaiian Students

Douglas C. Smith, David W. Leake, and **Noelani Kamekona**
University of Hawai'i at Mānoa

A total of 22 ethnic-minority students from an economically depressed area of Hawai'i and considered at-risk for emotional and behavioral disorders participated in a year-long school-based intervention designed to foster enhanced emotional, academic, and interpersonal skills. The intervention employed a guidance curriculum developed locally to be culturally competent. Results of standardized rating and observational measures using parents, teachers, and students as informants indicated decreases in clinical symptoms on a variety of subscales. Teachers tended to see improved performance on academic-related skills, while parents were more aware of reductions in aggressive and hyperactive behaviors as well as internalizing symptoms. Students themselves noted improvements in a wide range of social, emotional, and behavioral indices related to school.

Douglas C. Smith is an assistant professor in the Department of Counselor Education, University of Hawai'i at Mānoa. His current research interests are the social and emotional development of children with particular focus on anger management and violence prevention in schools.

David W. Leake is an assistant specialist with the Hawai'i University Affiliated Program (HUAP), University of Hawai'i at Mānoa. He is conducting anthropological research for a dissertation on cultural issues in serving youngsters with mental health needs in Hawai'i.

Noelani Kamekona is a project coordinator with the Hawai'i University Affiliated Program (HUAP), University of Hawai'i at Mānoa. She is creating replication materials for the interventions developed and demonstrated by Kāko'o 'ia Nā Lei.

Of Hawai'i's many ethnic groups, Native Hawaiians are at highest risk for a variety of social, educational, and health problems including special education placement due to emotional and behavioral disorders (EBD) (Office of Hawaiian Affairs, 1994). Those who have studied the problems of Native Hawaiians note that public services frequently fail to meet their needs due to a lack of "cultural competence" (Mokuau & Tauili'ili, 1992; Wegner, 1989). With regard to mental health services, for example, a Congressionally mandated needs assessment found that State mental health services "fail to accommodate Native Hawaiian values and life styles" (Native Hawaiian Health Research Consortium, 1985, p. x).

Project Kāko'o 'ia Nā Lei (Hawaiian for "beloved children supported"), funded by the U.S. Department of Education's (DOE) Office of Special Education and Rehabilitative Services, was designed to support improvements in the cultural competence of services for Native Hawaiian students with or at risk for EBD on the island of O'ahu's Wai'anae Coast. This area has a high concentration of Native Hawaiians, who constitute 55% of local residents compared to about 20% of the population statewide (the ethnic category "Native Hawaiian" includes both "pure" Hawaiians who have more than 50% Hawaiian blood and constitute only about 1% of the state's population and Part Hawaiians who have less than 50% Hawaiian blood but identify most with the Hawaiian culture).

The Wai'anae Coast is also an area of high need, with 58% of residents living below the poverty level and about 25% receiving direct welfare assistance, compared to under 10% for the State as a whole. Compared to the rest of the state, the area has disproportionate numbers of abused and neglected children, school drop-outs, teenage pregnancies, homeless school-aged children, juvenile offenders, substance-abusing youth, and students identified as having EBD.

Cultural Competence and Prevention

A key issue for schools serving culturally diverse populations is how to deal with what has been termed "cultural discontinuity" (Bowker, 1993). Cultural discontinuity is often observed in schools where most educators and related services providers come from a dominant culture with prevailing attitudes and values that differ from those of ethnic minority students. As a result, the behaviors of ethnic minority students are commonly misjudged or misunderstood (Leung, 1990). It has been proposed that the solution is "cultural competence," defined as "a set of congruent behaviors, attitudes and policies that come together in a system, agency or among professionals to work effectively in cross cultural situations" (Cross, Bazron, Dennis, & Isaacs, 1989, p. 13).

Another key issue for schools in an area such as the Wai'anae Coast is that of dealing with the impact of pervasive socioeconomic problems on student learning. Prevention and early intervention programs can provide students with supports and skills that help them overcome barriers to academic performance (Gesten & Weissberg, 1986).

Kāko'o 'ia Nā Lei has therefore worked to develop and demonstrate a prevention program designed to be culturally competent for Wai'anae Coast students, particularly those of Native Hawaiian ancestry, considered by school staff to be at-risk for EBD. The core of the program is a guidance curriculum, spanning kindergarten to sixth grade, developed locally to be culturally competent with funding from Kamehameha Schools Bishop Estate and the Hawai'i State Department of Education (DOE).

The curriculum is built around stories, collaboratively written by *kūpuna* (respected elders), that feature characters much like the students in the target audience. As they read the stories, students are guided to solve the moral dilemmas that arise through reference to traditional Native Hawaiian values and practices. For example, in a story for second graders, Keola brags to make himself look better than his friends, but this makes them avoid playing with him. Keola learns the connection between his behavior and his friends' reactions through a discussion with his grandfather that touches on the meanings of *aloha* ("feeling what other people feel") and *ha'aha'a* (humbleness).

The theoretical base for the curriculum is that of Kohlberg's (1981) stages of moral development, with the aim of fostering gradual advancement from self-serving to more autonomous moral judgments. The curriculum is modeled on Goldstein's (1988) skill-based approach. A total of 71 specific social, coping, and self-management skills are illustrated, taught, and reinforced over the course of the curriculum through group discussion, small group activities, role playing, Hawaiian-style arts and crafts, and other activities.

One previous evaluation of the guidance curriculum has been conducted by the Hawai'i State Department of Education (1995) in conjunction with its introduction at a Wai'anae Coast elementary school during the 1994–1995 school year. Teachers were to cover one story unit and its guidance concepts and skills each month by integrating them with the existing reading and language arts curriculum. The DOE evaluation of this initial implementation was based on interviews with students and school personnel, a student self-rating behavior scale, a corresponding class behavior rating scale for teachers, a teacher feedback form, and student incident referral data. Students reported finding the stories interesting and relevant to their lives, and they recognized that the stories have lessons for them. Student behavior improved according to the class-behavior rating scale completed by teachers at the beginning and end of the school year. Student incident referrals also declined from previous years.

Method

Participants

Participants were recruited from three elementary school sites on O'ahu and included 22 third and fourth graders nominated by their teachers as at-risk for developing emotional disorders, behavioral disorders, or both (EBD) warranting referral for special education services. In general, these students were perceived by their teachers to be performing below grade level in academic areas, to lack motivational readiness, and to exhibit social or emotional problems at school.

Of the 22 students nominated by their teachers, 21 were male. Sixty-four percent of the sample were Native Hawaiian or Pacific Islander with the remainder being classified as of Asian American ancestry including Chinese, Japanese, and Filipino.

Instruments

Behavior Ratings. The Behavior Assessment System for Children [BASC] (Reynolds & Kamphaus, 1992) is a multimethod, multidimensional approach to measuring behavior, cognitions, and emotions in children between the ages of 4 and 18. It utilizes parent, teacher, and student self-reports to evaluate both positive (adaptive) and negative (clinical) dimensions of behavior. Over the past few years, it has become one of the premier assessment instruments for students with EBD.

The Parent Rating Scales (PRS) of the BASC includes 138 items measuring the frequency of student behavior according to a four-point scale ranging from *Never* to *Almost Always*. It includes nine clinical scales (Aggression, Anxiety, Attention Problems, Atypicality, Conduct Problems, Depression, Hyperactivity, Somatization, Withdrawal) and three adaptive scales (Adaptability, Leadership, Social Skills). Internal consistency and test-retest reliabilities for PRS scales are quite good with coefficients ranging from the mid to upper .70s to the mid .90s for the various scales (Reynolds & Kamphaus, 1992). Concurrent validity and discriminant validity have been established by correlating PRS scales with other well-known rating scales such as the Child Behavior Checklist [CBCL] (Achenbach, 1991). These correlations generally fall within the mid .50s and serve as support for the scales' construct validity.

The Teacher Rating Scales (TRS) of the BASC consists of 148 items utilizing the same *Never* to *Almost Always* rating format. It includes ten clinical (Aggression, Anxiety, Attention Problems, Atypicality, Conduct Problems, Depression, Hyperactivity, Learning Problems, Somatization, Withdrawal) and four adaptive scales (Adaptability, Leadership, Social Skills, Study Skills). As with the PRS, reliability of TRS scales as measured through internal consistency and test-retest methods is quite impressive with correlations ranging from the mid .70s to the mid .90s (Reynolds &

Kamphaus, 1992). Construct validity, based upon concurrent and discriminant evidence in association with other scales such as the Teacher's Report Form (Achenbach, 1991), has further established the overall usefulness of the scales.

The Student Self-Report (SRP) of the BASC consists of 152 items comprising eight clinical scales (Anxiety, Attitude to School, Attitude to Teachers, Atypicality, Depression, Locus of Control, Sense of Inadequacy, Social Stress) and four adaptive scales (Interpersonal Relations, Relations with Parents, Self-esteem, Self-reliance). Respondents designate each item as either *True* or *False* as it pertains to them.

Reliability data for the SRP is quite good with internal consistency coefficients averaging about .80 and test-retest correlations averaging .76 for the various scales (Reynolds & Kamphaus, 1992). Concurrent and discriminant validity data are based upon correlations with other well-known self-report instruments including the Youth Self-Report (Achenbach, 1985) and the Behavior Rating Profile (Brown & Hammill, 1983). In general, these correlations have been moderate to high, lending credibility to the SRP's validity.

Behavioral observations. The BASC Student Observation System utilizes a momentary time-sampling procedure for recording both positive and negative behaviors occurring within the classroom. Observers record occurrences of target behaviors during 3-second intervals spaced 30 seconds apart over a 15-minute observation period. Specific behavioral categories include response to teacher/lesson, peer interaction, work on school subjects, transition movement, inappropriate movement, inattention, inappropriate vocalization, somatization, repetitive motor movements, aggression, self-injurious behavior, inappropriate sexual behavior, and bowel/bladder problems.

Anger. The Multidimensional School Anger Inventory [MSAI] (Smith, Furlong, Bates, & Laughlin, 1998) is a 31-item self-report inventory measuring affective, cognitive, and behavioral components of anger related to school situations. Respondents indicate intensity of angry feelings, hostility toward school, and frequency of both positive and negative expressions of anger according to a four-point scale. Factor analyses support the scale's theoretical structure, and both internal consistency and test-retest coefficients are high (ranging from .58 to .88). Validity evidence for the subscales was compiled by examining relationships between the MSAI and existing measures of anger and aggression as well as teacher ratings of behavior at school (Smith et al., 1998).

Procedure

Kāko'o 'ia Nā Lei's school-based prevention program was conducted during the 1996-1997 school year by three female educational aides, one for each participating school site. Aides lived within the surrounding community and were trained to use the guidance curriculum by one of its lead developers. At the request of the schools, the target sample included students in the third and fourth grades, when behavior problems for many students were observed to begin escalating. Referrals to the program were based upon teacher perceptions that student behavior problems needed attention but were not yet sufficiently serious to justify referral for evaluation for special education eligibility. The intake process included a meeting with at least one parent to explain the program and to complete consent forms and pretest evaluation instruments. After obtaining parental consent, aides at each site conducted pretest interviews with students and their teachers and completed a 15-minute observation within each student's classroom.

During the school year, educational aides conducted intensive pull-out sessions with students one or two times a week during nonacademic class periods. The aides worked with students either individually or in small groups in order to maximize treatment effects and to avoid disciplinary problems. Sessions usually began with a "check" on how the students were feeling and why they were feeling that way in order to foster improved skills in recognizing, expressing, and regulating emotions.

The educational aides used stories from the guidance curriculum as the basis for discussing how students could use the values and expectations of their own family, community, and school to be *pono* (act rightly) and resolve the problems and conflicts they faced in their daily lives. Role playing, arts and crafts, and other activities related to the stories were also conducted, and sessions ended with a food snack unless student behavior warranted withholding of this reward. The aides established close, trusting relationships with most, if not all, of their students, who often approached them for advice or other personal contact outside the scheduled sessions.

In addition, aides maintained as much contact as possible with parents and teachers to develop supports for generalizing lessons and skills learned to other settings. Two family gatherings, which included dinner, were organized during the school year to promote family participation and understanding of the program.

Posttest evaluation data were collected from parents, teachers, and students near the end of the school year. A 15-minute posttest observation was also conducted in each student's classroom according to BASC Student Observation System guidelines.

Results

Raw scores on BASC parent, teacher, and student rating scales were converted to standard *T* scores based on norm-group means. Raw scores for MSAI subscales and frequencies for each behavior category of the Student Observation System were also totaled. Paired sample *t* tests comparing pre- and posttest data were then computed for each dependent variable.

Results of the analyses for the Parent Rating Scales are shown in Table 1. Declines on mean scores from pre- to posttesting were noted for all clinical scales but were most dramatic for the Aggression, Anxiety, Hyperactivity, and Somatization subscales. Decreases in Atypicality and Depression ratings were also notable but only marginally significant ($p < .10$). Little change in parent ratings of adaptive behavior of the students across the school year was apparent.

TABLE 1
Means, Standard Deviations, and t Tests for Significance of Differences Between Pre- and Posttest BASC Parent Ratings (N = 19)

Scale	Pretest		Posttest		*t*
	M	*SD*	*M*	*SD*	
Clinical					
Aggression	57.68	10.86	50.74	12.97	2.35*
Anxiety	45.26	8.56	39.58	8.85	3.69**
Attention Problems	57.68	7.36	57.37	7.99	.18
Atypicality	47.68	8.40	44.63	7.80	1.95
Conduct Problems	67.37	14.39	63.26	14.84	1.24
Depression	48.79	9.51	45.16	10.29	2.04
Hyperactivity	50.53	8.36	45.42	11.29	2.53*
Somatization	51.11	7.72	43.68	8.67	3.67**
Withdrawal	51.89	6.93	50.00	6.88	1.05
Adaptive					
Adaptability	41.53	5.50	41.79	9.99	-.12
Leadership	35.16	9.89	34.68	8.60	.21
Social Skills	35.16	7.39	37.16	10.84	-.75

Note. 19 students had both pretest and posttest parent ratings for inclusion in this analysis.
*p < .05. **p < .01.

Analysis of BASC teacher ratings again suggest student improvement on all clinical scales, although the area of Attention Problems was most notable. These results are depicted in Table 2. Declines in Atypical and Hyperactive behaviors approached statistical significance. In terms of adaptive scales,

TABLE 2
Means, Standard Deviations, and t Tests for Significance of Differences Between Pre- and Posttest BASC Teacher Ratings (N = 22)

Scale	Pretest		Posttest		*t*
	M	*SD*	*M*	*SD*	
Clinical					
Aggression	67.41	11.50	65.18	14.73	1.04
Anxiety	49.00	13.07	48.45	11.44	.28
Attention Problems	63.05	7.72	57.14	10.50	3.31**
Atypicality	59.23	17.57	54.68	12.97	1.92
Conduct Problems	64.82	14.11	63.00	13.01	.62
Depression	57.14	13.16	54.82	12.08	.91
Hyperactivity	64.73	13.25	59.27	12.94	1.95
Learning Problems	58.45	9.44	56.18	7.94	1.34
Somatization	49.59	8.94	49.09	9.47	.33
Withdrawal	52.68	12.78	51.64	9.94	.41
Adaptive					
Adaptability	39.82	7.93	42.23	9.61	-1.87
Leadership	41.05	7.18	41.55	7.02	-.32
Social Skills	38.86	8.11	42.14	8.43	-1.87
Study Skills	36.95	5.23	41.14	7.11	-3.22

**$p < .01$.

modest improvements were noted in all four areas from pre- to posttesting but most dramatically in the area of Study Skills.

Students' Self-Report ratings and analyses are shown in Table 3. On the clinical scales, significant reductions in Anxiety, negative Attitude to School,

TABLE 3

Means, Standard Deviations, and t Tests for Significance of Differences Between Pre- and Posttest BASC Student Ratings (N = 22)

Scale	Pretest		Posttest		*t*
	M	*SD*	*M*	*SD*	
Clinical					
Anxiety	52.23	10.25	48.50	11.72	2.64*
Attitude to School	51.00	9.02	45.36	7.87	3.36**
Attitude to Teachers	54.45	11.33	51.27	12.63	1.52
Atypicality	55.86	12.42	53.45	13.45	1.03
Depression	56.68	9.35	50.73	7.89	3.06**
Locus of Control	54.45	8.33	51.55	8.56	1.47
Sense of Inadequacy	58.59	13.10	52.14	12.06	3.02**
Social Stress	53.64	10.93	50.14	10.44	1.69
Adaptive					
Interpersonal Relations	41.18	12.42	46.82	11.01	-2.08*
Relations with Parents	41.68	10.56	48.41	11.54	-3.13**
Self-Esteem	48.55	6.36	52.32	6.36	-2.57*
Self-Reliance	47.23	9.20	52.95	7.79	-3.11**

*$p < .05$. **$p < .01$.

Depression, and Sense of Inadequacy were apparent from pre- to posttesting. Significant increases in Interpersonal Relations, Relations with Parents, Self-Esteem, and Self-Reliance based on students' self-perceptions were also evident from these analyses.

Table 4 lists mean frequencies of observed behaviors over the course of 15-minute pre- and posttest classroom observation periods. As can be seen, there were only minor decreases in all categories of inappropriate behaviors over the course of intervention, although it should be noted that these behaviors occurred relatively infrequently for the sample as a whole. In

TABLE 4

Means, Standard Deviations, and t test for Significance of Differences Between Pre- and Posttest BASC Behavioral Observations (N=22)

Behavioral Category	Pretest		Posttest		*t*
	M	*SD*	*M*	*SD*	
Inappropriate					
Inappropriate Behaviors	2.55	2.54	1.68	1.91	1.62
Inappropriate Vocalization	1.45	2.04	.68	1.21	1.66
Inattention	2.36	2.80	1.86	2.03	.79
Appropriate					
Peer Interaction	3.09	4.00	6.50	4.98	-2.82**
Responses to Teacher/Lesson	9.55	4.14	7.18	4.13	2.29*
Transition Movement	4.05	5.06	4.41	3.57	-.28
Work on School Subjects	5.91	5.59	10.14	3.99	-2.72*

Note. The categories of Somatization, Repetitive Movements, Aggression, Self-injurious Behavior, Inappropriate Sexual Behavior, and Bowel/Bladder problems were not subjected to statistical analysis due to their extremely low frequency of occurrence during both pre- and posttesting.
$^{*}p < .05$. $^{**}p < .01$.

terms of appropriate behaviors, there was a significant increase in frequency of appropriate Peer Interactions within the classroom as well as frequency of Work on School Subjects. Frequency of appropriate Response to Teacher, however, decreased from pre- to posttesting.

In terms of anger at school as measured by the MSAI, there were only modest changes across dimensions of emotional reactivity, hostility, and positive and negative anger expression over the course of the intervention. The changes noted failed to reach acceptable levels of statistical significance.

Discussion

Results of this study lend support to the use of a culturally competent intervention program for Native Hawaiian and other ethnic minority students designated "at-risk" for educational, emotional, and behavioral difficulties. Given the relatively small sample size employed in this study, improvements noted in such symptom categories as hyperactivity, anxiety, aggression, and inattention are particularly encouraging. In general, the intervention appeared to result in reduction in a wide range of clinical symptoms and a corresponding increase in adaptive or coping behaviors. Qualitative comments by participants, their teachers, and parents added further credibility to the effectiveness of the program and its efforts to present material in a culturally relevant manner.

One of the more interesting sidelights noted was the extent of differences in perceptions of parents, teachers, and students themselves with regard to program impact. Parents tended to evaluate the intervention program positively in its effects on such externalizing behaviors as aggression and hyperactivity as well as internalizing behaviors such as anxiety and somatization. Teachers, on the other hand, perceived student improvements in study skills and enhanced attention at school. It is likely that these differences reflect both groups' expectations for appropriate behaviors within the demands of specific environments. Of the three groups asked to provide pre- and posttest ratings of behavior, students' self-ratings were clearly the most positive in terms of overall intervention effects. Perhaps students can more accurately evaluate their own feelings, attitudes, and behaviors in these situations or, conversely, are more prone to report socially desirable behaviors. Use of a social desirability scale in future evaluation efforts would help to clarify these findings.

Despite its promise for future intervention efforts, results of this study should be viewed with caution. First and foremost, in the absence of an appropriate control group, it is unclear to what extent the findings may be attributable to factors external to the treatment itself. Use of a standardized, norm-based assessment system adds some credibility to findings, since it allowed us to measure performance against a set of national standards.

Indeed, subjects in this study fit the profile of an at-risk group according to pretest findings. Improvements noted on the majority of clinical and adaptive scales merely brought these subjects closer to what might be considered "normal" levels of functioning.

A second concern is the small sample size and disproportionate number of male subjects used in this study. Future studies should include a larger, more representative sample if results are to be generalizable to larger populations of at-risk students. Use of multimethod assessments including behavioral observations across a variety of school situations is also recommended.

A third area of concern relates to the longer term maintenance and generalizability of findings. Follow-up studies of students in the current cohort would help to establish the extent to which this type of intervention can make meaningful and lasting impressions on students' attitudes and behaviors.

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Creating Local Norms to Evaluate Students in a Norm-Referenced Statewide Testing Program

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Hawai'i uses the Stanford Achievement Test 8th edition (Stanford 8) to assess academic performance of the student population in Grades 3, 6, 8, and 10. Hawai'i was not included in the norming for the Stanford 8, neither for the national nor the Pacific norms. Hawai'i norms were therefore developed based on the Stanford 8 reading and mathematics results from 1992 to 1996 to supplement the national norms and provide an additional means of comparison. Hawai'i reading norms were lower at every grade level, especially Grades 3 and 8. However, local mathematics norms showed Hawai'i students exceeding national norms in the upper quartile in Grades 3, 6, and 8. Hawai'i and national Grade 10 mathematics norms were very similar. Average performance changes between tested grades were analyzed. Longitudinal cohorts made greater gains in achievement from 3rd–6th and 8th–10th grades than the national counterparts, while the 6th–8th grade group made lesser gains. These norms provide tools to improve the understanding of Hawai'i students' performance relative to their mainland counterparts.

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Assessment of student achievement is required by legislation in many states. The Hawai'i Department of Education mandates annual testing for all public school students in Grades 3, 6, 8, and 10 unless specifically excluded from testing. The most widely used standardized tests are norm-referenced ones, which were developed to compare individual student performance to a representative national sample. The norm-referenced Stanford Achievement Test, 8th Edition (Stanford 8), published in 1992 by the Psychological Corporation, is generally the standardized instrument used to measure academic achievement in Hawai'i. The Stanford 8 results can be reported in a variety of normed scores (e.g., stanines, percentiles, and scaled scores) for use in comparing students in the target group (Hawai'i) with the norming group (Heim, 1994). Even though commentators have emphasized the shortcomings and questioned the validity of standardized tests, it is improbable that these tests will be discarded as assessment instruments (Crouse & Trusheim, 1989; Powell & Steelman, 1996) as they appear to be the most efficient and relatively objective method of measuring student achievement.

There have been numerous controversies surrounding the use of norm-referenced tests in Hawai'i (Aizawa, 1994; Chin-Chance, 1994; Heim, 1994; Paris, 1994). However, in order to consider the appropriateness of administering the Stanford 8, the purpose of the mandated assessment must be understood: to assess the performance of students. To assess the achievement of Hawai'i public school students, their performance on the Stanford 8 is compared with the performance of other students and schools in the nation.

The Stanford 8 national norms are based upon a sample (*N* = 175,000) of students assessed in 1991 (The Psychological Corporation, 1992b). However, students in Hawai'i's public schools were not included in the sample, neither in the pilot testing nor in the development of the national norms. The Psychological Corporation maintains that Hawai'i's lack of representation in the national norming process does not significantly affect the national norms, as Hawai'i's student population includes ethnic groups that comprise only 1–2% of the United States' student population (J. Mayo, personal communication, September 1994). Moreover, when Stanford 8 norms were developed for the Pacific region, students in American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands (CNMI) were included, but students in Hawai'i were not (M. Turituri, personal communication, October 23, 1996).

Norm-referenced standardized tests, most commonly used in statewide assessment, provide a basis for comparing the achievement of an individual with that of the normative group of examinees. Norms make raw scores useful by providing a point of reference which indicates if the student's performance is normal, average, typical, or characteristic of the normative group. Relating a score to national norms can be useful in (a) comparing a student's score with that of students nationally, (b) comparing a student's performance across two or more different tests, (c) comparing scores obtained at different times (e.g., charting change or progress from year to year), and (d) identifying strengths and weaknesses (Nunnally, 1972; Brown & Bryant, 1984). There are four important features to use when examining norms: (a) the types of derived scores that are reported, (b) the demographic representativeness of the normative sample, (c) the size of the normative group, and (d) the recency of test standardization (Wallace, Larsen, & Elskin, 1992).

It is vital that the sampled group used in the construction of norms be representative of the tested population so that the performance of students assessed with the norm-referenced instrument can be compared to the normative group. National norms are broadly applicable to all students in the nation, as they are theoretically based upon randomly selected students who are representative of that nation (Petersen, Kolen, & Hoover, 1989). However, at times, special normative data are developed to provide more relevant information than the national norms, especially when the tested populations are different from the normative group. It is often advantageous for a state or school district to develop special norms to supplement the national norms, which may be inadequate for the local setting, to provide an additional means of comparison (Nunnally, 1972; Petersen et al., 1989; Brown & Bryant, 1984).

Two types of special norms can be developed to augment national norms: local norms and subgroup norms. Local norms are based on the performance of individuals residing in a specific community and are valuable when it is known that these students are significantly different from the national normative group. For example, local norms could be advantageous when testing communities with high percentages of minority children (Sax, 1989), especially when evaluating student performance based on services within that school district. Subgroup norms are based on the performance of individuals from a discrete portion of the population, such as students of a specific gender, socioeconomic class, ethnic group, or type of disability (Petersen et al., 1989; Brown & Bryant, 1984). Brown and Bryant recommended the development of local norms when there are significant differences in characteristics of ethnicity, gender, achievement performance, or age between the local population and the normative group. The typical characteristics of Hawai'i's public school students warrant the development of local norms. It would be helpful to develop a "normal" achievement growth trajectory for students in Hawai'i so that one could compare individual performance within Hawai'i to an indicator of "typical" achievement.

Rationale for Development of Local Norms in Hawai'i

Ethnicity

Unlike the rest of the states, the ethnicity of the public school population in Hawai'i is approximately 23% Caucasian, 4% Hispanic, 0.4% African American, 21% Native Hawaiian and Part Hawaiian, 34% Asian, and 18% other (Chin-Chance, Gronna, & Jenkins, 1996a). The Stanford 8 norms, however, were developed using a representative national sample of 72% Caucasian, 7% Hispanic, 15% African American, and 5% other ethnicity (The Psychological Corporation, 1992b). Studies have linked achievement in Hawai'i to ethnicity (Brandon, 1984; Educational Testing Service, 1993; Gallimore, Boggs, & Jordan, 1974). The national norms, therefore, do not reflect Hawai'i's multicultural student population and achievement.

Gender

The achievement pattern in mathematics is atypical for boys and girls in Hawai'i (Brandon, Jordan, & Higa, 1995; Kiplinger, 1996). The Total Reading and Total Mathematics "dimensions" of the Stanford 8 are computed based on the scores of several subtests in each area. Hawai'i is the only large school district in the United States where girls outperform boys in Stanford 8 Total Reading and Total Mathematics at all grade levels (Liskum & Chin-Chance, 1996).

Achievement

Unlike the national average (10.4%), Hawai'i has a higher (19%) proportion of students enrolled in private schools (Lai, Saka, & Chin-Chance, 1994). Research indicates that private school students who once attended public schools in Hawai'i typically score in the above-average range of achievement (Lai et al., 1994). Furthermore, 12.9% of the tested student population in Hawai'i is comprised of special education students (Chin-Chance, Gronna, & Jenkins, 1996b). Studies have indicated that students with disabilities typically score in the below-average range of achievement (Gronna, Jenkins, & Chin-Chance, in press). The Stanford 8 normative sample includes only 4.9% special education students (The Psychological Corporation, 1992a). When Hawai'i is compared to the nation, the normative sample includes more "bright" students who are not attending private schools and fewer students with disabilities.

Age

Hawai'i is one of eight states maintaining late entrance admission (December 1 to January 1) cut-off dates (Liskum & Chin-Chance, 1996). Hawai'i has more "younger" students within each grade than other states. Younger children are usually at an academic disadvantage when compared to older classmates (Crosser, 1991). Liskum and Chin-Chance (1996) found a relationship between age and Stanford 8 test scores in Hawai'i at all tested grades. Children born in the last three months of the year had statistically significant lower achievement scores than their older peers. They suggested that Hawai'i is at a disadvantage in norm-referenced comparisons with other states, because the Stanford 8 normative sample was based on an older population.

Purpose of Study

In this study we sought to analyze the standardized test score data for students within Hawai'i in order to profile their achievement. We hypothesized that the overall test performance of students within Hawai'i is different from the mainland population. We developed local or statewide norms for public-school students taking the Stanford 8 in Grades 3, 6, 8, and 10 based on cross-sectional data from 1992 to 1996 in order to assess performance of these students. A longitudinal analysis was conducted to develop a sense of typical changes in reading and mathematics based on the Stanford 8.

Method

The Hawai'i Department of Education Test Development Section of the Planning and Evaluation Group maintains an extensive student identity database on all public-school students that includes ethnicity, home language, age, and gender. The Stanford 8 results have been stored in annual databases. The student identity and Stanford 8 databases for 1992 through 1996 (*N* = 247,817) were used for analysis. During this period, approximately 68,679 Grade 3 students, 66,553 Grade 6 students, 60,400 Grade 8 students, and 51,185 Grade 10 students were assessed using the Stanford 8.

Procedure

Development of Hawai'i Norms Based on Cross-Sectional Data

Using Microsoft Access (Microsoft, 1995) the individual student records (*N* = 1,069,500) in the 1992 to 1996 demographic databases were disaggregated into tested grades and linked by student identification numbers to the Stanford 8 databases. The cross-sectional data from 1992 and 1996 were combined to provide more stable benchmarks. Of these, all Total Reading student scaled scores and Total Mathematics scaled scores in grades 3, 6, 8, and 10 were used to develop Hawai'i norms for the test dimensions at each tested grade level. The Stanford 8 scaled scores represent approximately equal units in learning on a continuous scale from 1 to 999 and facilitate the conversion into other score types that are suitable for studying the change in performance over time (The Psychological Corporation, 1992a). Descriptive statistics and frequency distributions of scores within tested grades were calculated using SPSS 7.0 for Windows 95 (1996). From these data, tentative Hawai'i percentile rank norms were constructed.

National normative data were compiled from the technical data reports for the Stanford 8 (The Psychological Corporation, 1992b). The normative data for scaled scores and percentiles were published in the "look-up" tables by administration data and test form. The means and standard deviations of the scaled scores of the combined spring standardization sample and number of students included in the sample were published in national technical reports (The Psychological Corporation, 1992b). The mean scores for the combined spring standardization sample may vary from specific values found in the "look-up" tables due to slight differences between test forms. The mean scaled scores for Total Reading and Total Mathematics dimensions were determined from the Stanford 8 technical reports and were identified as the nationally normed scaled score at the 50th percentile rank for each grade. The arithmetic differences between national means at sequential grades were computed to determine the national average scaled score increases per grade level and test dimension.

Changes in Scaled Scores Between Grades Based on Longitudinal Data

To develop longitudinal cohorts, the student identity and Stanford 8 databases were further linked to test results at an earlier grade. The longitudinal analysis was based on two 3rd-to-6th-grade cohorts ($N = 20{,}826$), three 6th-to-8th-grade cohorts ($N = 29{,}948$), and three 8th-to-10th-grade cohorts ($N = 23{,}683$). These cohorts were comprised of students enrolled in Hawai'i public schools during the years 1992 to 1996.

The cohort data were aggregated by grade grouping to provide more stable benchmarks. To study the changes between the tested grades the Psychological Corporation scaled scores were used, as they adequately represent approximately equal units on a continuous scale and are equivalent across test forms and test levels (The Psychological Corporation, 1992b).

Hawai'i scaled score mean increases were determined for each longitudinal cohort's Total Reading and Total Mathematics dimensions. The associated scaled score corresponding to the 50th percentile rank of the frequency distribution was identified at each grade level and dimension. The arithmetic differences between Hawai'i means at sequential grades were computed to determine the Hawai'i average scaled score increases per cohort and test dimension.

Results

Tables 1 and 2 represent the descriptive statistics for Stanford 8 Total Reading and Total Mathematics scaled scores for each Hawai'i grade level based on the cross-sectional data. Hawai'i means and standard deviations for test dimensions are different from the national norms at each grade level. The

TABLE 1
Total Reading Scaled Scores for Stanford Achievement Test 8: 1992–1996

	Hawai'i			Nation		
Grade	*M*	*SD*	*N*	*M*	*SD*	*N*
Third	590	38	65,866	611	40	9,617
Sixth	642	34	65,218	656	38	9,870
Eighth	661	36	58,033	676	36	8,711
Tenth	679	35	47,157	688	36	6,491

Note. The mean scores for the combined spring standardization sample may vary from specific values found in the "look-up" tables due to slight differences between test forms.

TABLE 2
Total Mathematics Scaled Scores for Stanford Achievement Test 8: 1992–1996

	Hawai'i			Nation		
Grade	*M*	*SD*	*N*	*M*	*SD*	*N*
Third	596	43	66,623	596	40	9,636
Sixth	657	37	64,978	663	39	9,792
Eighth	683	39	57,473	690	39	8,671
Tenth	707	44	48,028	705	44	6,440

Note. The mean scores for the combined spring standardization sample may vary from specific values found in the "look-up" tables due to slight differences between test forms.

Total Mathematics kurtosis (-.145 to .910) and skewness (.390 to .817) and Total Reading kurtosis (-.407 to .116) and skewness (.293 to .468) for each Hawai'i frequency distribution of scores are represented by grade in Table 3.

TABLE 3
Kurtosis and Skewness for Frequency Distributions of Scaled Scores in Hawai'i

	Total Reading		Total Mathematics	
Grade	*Kurtosis*	*Skewness*	*Kurtosis*	*Skewness*
Third	-.407	.334	-.145	.390
Sixth	-.193	.333	.282	.656
Eighth	.116	.468	.588	.817
Tenth	-.225	.293	.910	.801

The distribution of scores is generally positively skewed. The distribution of the Hawai'i scaled scores does not fall along the normal distribution of the Stanford 8 scaled scores for the Total Reading and Total Mathematics dimensions.

Tentative Hawai'i percentile rank norms were constructed for Grades 3, 6, 8, and 10 from the scores of all students who took the Stanford 8 in a standardized manner. These norms include students with disabilities and have a fairly equal representation of male and female students (e.g., males: 51.0%, 50.5%, 51.2% and 50.1% for Grades 3, 6, 8, and 10, respectively). Tables 4 through 11 compare Hawai'i percentile rank norms to national norms for reading and mathematics dimensions.

The reading performance gap between the Hawai'i and national norms is the greatest at Grades 3 (14 to 20 scaled score points) and 8 (10 to 16 scaled score points). Smaller performance gaps are noted for Grades 6 and 10. The performance gap is not consistent across all performance levels. For Grades 3, 6, and 10 the largest differences occur in the mid-range, while Grade 8 Hawai'i students demonstrate the most severe gap in the lower half of the performance range.

Hawai'i mathematics performance indicates relatively small differences (3 to 6 scaled score points) when compared to national norms. In Grades 3, 6, and 8, Hawai'i students perform better than their national counterparts in the upper quartile range and less well in the middle quartiles. At Grade 10, the national normative group performs better at almost every level but only by a very small amount (3 to 4 scaled score points).

Average scaled score values were further analyzed to ascertain the average changes in scaled scores between grades based on a longitudinal

TABLE 4

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Third Grade Total Mathematics

Hawai'i Norms–3rd Grade Total Mathematics								National Norms–3rd Grade Total Mathematics							
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	458	**26**	565	**51**	594	**76**	627	**1**	511	**26**	567	**51**	595	**76**	624
2	527	**27**	566	**52**	595	**77**	628	**2**	518	**27**	569	**52**	596	**77**	625
3	530	**28**	567	**53**	596	**78**	630	**3**	521	**28**	570	**53**	597	**78**	626
4	531	**29**	568	**54**	597	**79**	632	**4**	525	**29**	571	**54**	598	**79**	627
5	535	**30**	569	**55**	598	**80**	633	**5**	529	**30**	572	**55**	599	**80**	628
6	536	**31**	570	**56**	600	**81**	635	**6**	531	**31**	574	**56**	600	**81**	629
7	537	**32**	572	**57**	601	**82**	636	**7**	533	**32**	575	**57**	601	**82**	631
8	538	**33**	573	**58**	602	**83**	638	**8**	535	**33**	576	**58**	602	**83**	633
9	540	**34**	574	**59**	603	**84**	640	**9**	538	**34**	577	**59**	603	**84**	635
10	542	**35**	575	**60**	604	**85**	642	**10**	540	**35**	578	**60**	604	**85**	637
11	543	**36**	576	**61**	605	**86**	644	**11**	542	**36**	580	**61**	605	**86**	638
12	545	**37**	577	**62**	607	**87**	646	**12**	543	**37**	581	**62**	607	**87**	639
13	547	**38**	579	**63**	608	**88**	648	**13**	545	**38**	582	**63**	608	**88**	641
14	548	**39**	580	**64**	609	**89**	650	**14**	548	**39**	583	**64**	609	**89**	644
15	550	**40**	582	**65**	611	**90**	653	**15**	550	**40**	584	**65**	610	**90**	646
16	551	**41**	583	**66**	612	**91**	654	**16**	551	**41**	585	**66**	611	**91**	648
17	553	**42**	584	**67**	613	**92**	657	**17**	554	**42**	586	**67**	613	**92**	651
18	554	**43**	585	**68**	616	**93**	661	**18**	555	**43**	587	**68**	614	**93**	654
19	555	**44**	586	**69**	617	**94**	665	**19**	557	**44**	588	**69**	615	**94**	657
20	557	**45**	587	**70**	618	**95**	670	**20**	559	**45**	589	**70**	616	**95**	663
21	558	**46**	588	**71**	619	**96**	675	**21**	560	**46**	590	**71**	618	**96**	667
22	559	**47**	589	**72**	620	**97**	681	**22**	562	**47**	591	**72**	619	**97**	671
23	560	**48**	590	**73**	622	**98**	687	**23**	563	**48**	592	**73**	620	**98**	679
24	562	**49**	591	**74**	624	**99**	702	**24**	565	**49**	593	**74**	621	**99**	685
25	563	**50**	592	**75**	625	**100**	778	**25**	566	**50**	594	**75**	623	**100**	778

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

TABLE 5

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for the Third Grade Total Reading

Hawai'i Norms–3rd Grade Total Reading								National Norms–3rd Grade Total Reading							
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	474	**26**	561	**51**	589	**76**	619	**1**	539	**26**	579	**51**	609	**76**	637
2	528	**27**	562	**52**	590	**77**	620	**2**	541	**27**	581	**52**	610	**77**	639
3	529	**28**	563	**53**	592	**78**	621	**3**	544	**28**	582	**53**	611	**78**	640
4	533	**29**	564	**54**	593	**79**	623	**4**	546	**29**	583	**54**	612	**79**	641
5	534	**30**	565	**55**	594	**80**	624	**5**	548	**30**	585	**55**	613	**80**	643
6	536	**31**	567	**56**	595	**81**	626	**6**	550	**31**	586	**56**	614	**81**	644
7	537	**32**	568	**57**	596	**82**	627	**7**	552	**32**	587	**57**	615	**82**	645
8	539	**33**	569	**58**	597	**83**	629	**8**	554	**33**	589	**58**	616	**83**	647
9	540	**34**	570	**59**	598	**84**	631	**9**	556	**34**	590	**59**	617	**84**	648
10	541	**35**	572	**60**	599	**85**	632	**10**	557	**35**	591	**60**	618	**85**	650
11	542	**36**	573	**61**	600	**86**	634	**11**	559	**36**	593	**61**	619	**86**	652
12	543	**37**	574	**62**	601	**87**	636	**12**	560	**37**	594	**62**	620	**87**	654
13	545	**38**	575	**63**	602	**88**	638	**13**	561	**38**	595	**63**	621	**88**	655
14	546	**39**	576	**64**	603	**89**	640	**14**	562	**39**	596	**64**	622	**89**	657
15	547	**40**	577	**65**	604	**90**	642	**15**	563	**40**	597	**65**	623	**90**	660
16	549	**41**	578	**66**	606	**91**	644	**16**	565	**41**	599	**66**	625	**91**	663
17	550	**42**	580	**67**	607	**92**	647	**17**	567	**42**	599	**67**	626	**92**	666
18	551	**43**	581	**68**	608	**93**	650	**18**	569	**43**	601	**68**	627	**93**	669
19	552	**44**	582	**69**	610	**94**	652	**19**	570	**44**	602	**69**	628	**94**	672
20	554	**45**	583	**70**	611	**95**	656	**20**	571	**45**	603	**70**	630	**95**	676
21	555	**46**	584	**71**	612	**96**	660	**21**	573	**46**	604	**71**	631	**96**	680
22	556	**47**	585	**72**	613	**97**	666	**22**	574	**47**	605	**72**	632	**97**	685
23	557	**48**	586	**73**	615	**98**	672	**23**	575	**48**	606	**73**	633	**98**	690
24	558	**49**	587	**74**	616	**99**	681	**24**	577	**49**	607	**74**	635	**99**	703
25	559	**50**	588	**75**	617	**100**	784	**25**	578	**50**	608	**75**	636	**100**	784

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

TABLE 6

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Sixth Grade Total Mathematics

	Hawai'i Norms–6th Grade Total Mathematics								National Norms–6th Grade Total Mathematics						
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	546	**26**	629	**51**	653	**76**	682	**1**	576	**26**	630	**51**	655	**76**	682
2	598	**27**	630	**52**	654	**77**	683	**2**	579	**27**	631	**52**	656	**77**	683
3	602	**28**	631	**53**	655	**78**	685	**3**	587	**28**	632	**53**	657	**78**	685
4	604	**29**	632	**54**	656	**79**	686	**4**	591	**29**	633	**54**	658	**79**	686
5	605	**30**	633	**55**	657	**80**	688	**5**	594	**30**	634	**55**	659	**80**	688
6	606	**31**	634	**56**	658	**81**	690	**6**	596	**31**	635	**56**	660	**81**	689
7	608	**32**	635	**57**	659	**82**	691	**7**	600	**32**	636	**57**	661	**82**	691
8	609	**33**	636	**58**	660	**83**	693	**8**	602	**33**	637	**58**	662	**83**	693
9	611	**34**	637	**59**	661	**84**	695	**9**	604	**34**	638	**59**	663	**84**	694
10	612	**35**	638	**60**	662	**85**	697	**10**	605	**35**	639	**60**	664	**85**	696
11	613	**36**	639	**61**	663	**86**	700	**11**	607	**36**	640	**61**	665	**86**	698
12	615	**37**	639	**62**	664	**87**	702	**12**	609	**37**	641	**62**	666	**87**	699
13	616	**38**	640	**63**	665	**88**	704	**13**	612	**38**	642	**63**	667	**88**	700
14	617	**39**	641	**64**	666	**89**	706	**14**	614	**39**	643	**64**	668	**89**	702
15	618	**40**	642	**65**	668	**90**	709	**15**	615	**40**	644	**65**	669	**90**	706
16	619	**41**	643	**66**	669	**91**	712	**16**	617	**41**	645	**66**	670	**91**	708
17	620	**42**	644	**67**	670	**92**	715	**17**	618	**42**	646	**67**	671	**92**	710
18	621	**43**	645	**68**	671	**93**	717	**18**	620	**43**	647	**68**	672	**93**	714
19	622	**44**	646	**69**	672	**94**	721	**19**	622	**44**	648	**69**	673	**94**	717
20	623	**45**	647	**70**	674	**95**	725	**20**	623	**45**	649	**70**	674	**95**	719
21	624	**46**	648	**71**	675	**96**	731	**21**	624	**46**	650	**71**	676	**96**	725
22	625	**47**	649	**72**	676	**97**	737	**22**	625	**47**	651	**72**	677	**97**	731
23	626	**48**	650	**73**	677	**98**	745	**23**	626	**48**	652	**73**	678	**98**	741
24	627	**49**	651	**74**	679	**99**	756	**24**	628	**49**	653	**74**	679	**99**	745
25	628	**50**	652	**75**	680	**100**	848	**25**	629	**50**	654	**75**	680	**100**	848

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

TABLE 7

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Sixth Grade Total Reading

	Hawai'i Norms–6th Grade Total Reading								National Norms–6th Grade Total Reading						
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	532	**26**	616	**51**	640	**76**	666	**1**	585	**26**	624	**51**	650	**76**	675
2	581	**27**	617	**52**	641	**77**	667	**2**	587	**27**	625	**52**	651	**77**	676
3	585	**28**	618	**53**	642	**78**	668	**3**	591	**28**	627	**53**	652	**78**	677
4	587	**29**	619	**54**	643	**79**	669	**4**	593	**29**	628	**54**	653	**79**	679
5	589	**30**	621	**55**	644	**80**	671	**5**	595	**30**	629	**55**	654	**80**	680
6	591	**31**	622	**56**	645	**81**	673	**6**	597	**31**	630	**56**	655	**81**	682
7	593	**32**	623	**57**	646	**82**	674	**7**	599	**32**	631	**57**	656	**82**	683
8	594	**33**	624	**58**	647	**83**	675	**8**	601	**33**	632	**58**	657	**83**	684
9	596	**34**	625	**59**	648	**84**	677	**9**	603	**34**	633	**59**	658	**84**	685
10	597	**35**	626	**60**	649	**85**	679	**10**	604	**35**	634	**60**	659	**85**	687
11	599	**36**	626	**61**	650	**86**	680	**11**	606	**36**	635	**61**	660	**86**	688
12	600	**37**	627	**62**	651	**87**	681	**12**	607	**37**	636	**62**	661	**87**	690
13	602	**38**	628	**63**	652	**88**	683	**13**	608	**38**	637	**63**	662	**88**	691
14	603	**39**	629	**64**	653	**89**	685	**14**	610	**39**	638	**64**	663	**89**	693
15	604	**40**	630	**65**	654	**90**	687	**15**	611	**40**	639	**65**	664	**90**	696
16	605	**41**	631	**66**	655	**91**	689	**16**	612	**41**	640	**66**	665	**91**	698
17	606	**42**	632	**67**	656	**92**	692	**17**	613	**42**	641	**67**	666	**92**	699
18	607	**43**	633	**68**	657	**93**	694	**18**	615	**43**	642	**68**	667	**93**	703
19	608	**44**	634	**69**	658	**94**	696	**19**	616	**44**	643	**69**	668	**94**	706
20	610	**45**	635	**70**	659	**95**	699	**20**	617	**45**	644	**70**	669	**95**	710
21	611	**46**	636	**71**	660	**96**	703	**21**	618	**46**	645	**71**	670	**96**	715
22	612	**47**	637	**72**	661	**97**	709	**22**	619	**47**	646	**72**	671	**97**	719
23	613	**48**	638	**73**	662	**98**	715	**23**	620	**48**	647	**73**	672	**98**	725
24	614	**49**	639	**74**	663	**99**	725	**24**	622	**49**	648	**74**	673	**99**	731
25	615	**50**	639	**75**	664	**100**	819	**25**	623	**50**	649	**75**	674	**100**	819

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

TABLE 8

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Eighth Grade Total Mathematics

	Hawai'i Norms–8th Grade Total Mathematics								National Norms–8th Grade Total Mathematics						
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	572	26	654	51	677	76	709	1	603	26	661	51	685	76	712
2	627	27	655	52	678	77	710	2	606	27	662	52	686	77	713
3	628	28	656	53	679	78	712	3	614	28	663	53	687	78	714
4	630	29	657	54	680	79	713	4	619	29	664	54	688	79	715
5	631	30	658	55	681	80	715	5	624	30	665	55	689	80	717
6	633	31	659	56	682	81	717	6	628	31	666	56	690	81	718
7	634	32	660	57	684	82	719	7	630	32	667	57	691	82	720
8	636	33	661	58	685	83	721	8	634	33	668	58	692	83	722
9	637	34	662	59	686	84	723	9	636	34	669	59	693	84	723
10	638	35	663	60	687	85	725	10	639	35	670	60	694	85	725
11	639	36	664	61	688	86	727	11	641	36	671	61	695	86	727
12	640	37	665	62	689	87	730	12	643	37	672	62	696	87	728
13	641	38	665	63	690	88	733	13	644	38	673	63	697	88	730
14	642	39	666	64	691	89	736	14	646	39	674	64	698	89	732
15	643	40	667	65	693	90	738	15	648	40	675	65	699	90	734
16	644	41	668	66	694	91	740	16	649	41	676	66	700	91	736
17	645	42	669	67	696	92	744	17	651	42	677	67	701	92	740
18	646	43	670	68	697	93	748	18	652	43	678	68	702	93	742
19	647	44	670	69	698	94	752	19	653	44	679	69	703	94	744
20	648	45	671	70	699	95	757	20	654	45	680	70	704	95	749
21	649	46	672	71	700	96	763	21	656	46	681	71	705	96	754
22	650	47	673	72	702	97	770	22	657	47	682	72	706	97	760
23	651	48	674	73	704	98	778	23	658	48	682	73	708	98	770
24	652	49	675	74	705	99	793	24	659	49	683	74	709	99	773
25	653	50	676	75	707	100	880	25	660	50	684	75	710	100	880

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

TABLE 9

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Eighth Grade Total Reading

	Hawai'i Norms–8th Grade Total Reading								National Norms–8th Grade Total Reading						
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	515	**26**	634	**51**	659	**76**	686	**1**	614	**26**	650	**51**	674	**76**	697
2	598	**27**	635	**52**	660	**77**	687	**2**	616	**27**	651	**52**	674	**77**	698
3	602	**28**	636	**53**	661	**78**	688	**3**	618	**28**	652	**53**	675	**78**	699
4	605	**29**	637	**54**	662	**79**	689	**4**	620	**29**	653	**54**	676	**79**	701
5	607	**30**	638	**55**	662	**80**	691	**5**	622	**30**	654	**55**	677	**80**	703
6	609	**31**	639	**56**	663	**81**	692	**6**	624	**31**	655	**56**	677	**81**	704
7	610	**32**	641	**57**	664	**82**	693	**7**	625	**32**	656	**57**	678	**82**	706
8	612	**33**	642	**58**	665	**83**	695	**8**	627	**33**	657	**58**	679	**83**	707
9	613	**34**	643	**59**	666	**84**	697	**9**	629	**34**	658	**59**	680	**84**	709
10	615	**35**	644	**60**	667	**85**	700	**10**	631	**35**	659	**60**	681	**85**	710
11	617	**36**	645	**61**	669	**86**	701	**11**	632	**36**	660	**61**	682	**86**	712
12	618	**37**	646	**62**	670	**87**	703	**12**	634	**37**	661	**62**	683	**87**	713
13	620	**38**	647	**63**	671	**88**	705	**13**	636	**38**	662	**63**	684	**88**	715
14	621	**39**	648	**64**	671	**89**	708	**14**	637	**39**	663	**64**	685	**89**	717
15	622	**40**	649	**65**	672	**90**	709	**15**	638	**40**	664	**65**	686	**90**	719
16	623	**41**	650	**66**	673	**91**	712	**16**	639	**41**	665	**66**	687	**91**	721
17	624	**42**	651	**67**	674	**92**	714	**17**	641	**42**	666	**67**	688	**92**	723
18	625	**43**	651	**68**	676	**93**	717	**18**	642	**43**	667	**68**	689	**93**	724
19	626	**44**	652	**69**	677	**94**	721	**19**	643	**44**	668	**69**	690	**94**	727
20	627	**45**	653	**70**	678	**95**	724	**20**	644	**45**	669	**70**	691	**95**	731
21	629	**46**	654	**71**	679	**96**	728	**21**	645	**46**	670	**71**	692	**96**	736
22	630	**47**	655	**72**	680	**97**	736	**22**	646	**47**	671	**72**	693	**97**	741
23	631	**48**	656	**73**	681	**98**	743	**23**	647	**48**	672	**73**	694	**98**	747
24	632	**49**	657	**74**	683	**99**	754	**24**	648	**49**	672	**74**	695	**99**	754
25	633	**50**	658	**75**	684	**100**	835	**25**	649	**50**	673	**75**	696	**100**	835

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores.
National norm ©1991 The Psychological Corporation.

TABLE 10

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Tenth Grade Total Mathematics

	Hawai'i Norms–10th Grade Total Mathematics								National Norms–10th Grade Total Mathematics						
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	563	**26**	676	**51**	702	**76**	732	**1**	613	**26**	680	**51**	705	**76**	739
2	638	**27**	677	**52**	703	**77**	735	**2**	621	**27**	681	**52**	706	**77**	741
3	639	**28**	678	**53**	704	**78**	736	**3**	629	**28**	682	**53**	707	**78**	743
4	644	**29**	679	**54**	705	**79**	739	**4**	636	**29**	682	**54**	708	**79**	745
5	646	**30**	680	**55**	706	**80**	740	**5**	641	**30**	684	**55**	709	**80**	747
6	649	**31**	682	**56**	707	**81**	742	**6**	645	**31**	685	**56**	710	**81**	749
7	652	**32**	683	**57**	708	**82**	744	**7**	648	**32**	686	**57**	711	**82**	751
8	655	**33**	684	**58**	709	**83**	746	**8**	651	**33**	687	**58**	713	**83**	753
9	656	**34**	685	**59**	710	**84**	749	**9**	653	**34**	688	**59**	714	**84**	755
10	658	**35**	686	**60**	711	**85**	752	**10**	655	**35**	689	**60**	715	**85**	757
11	659	**36**	687	**61**	712	**86**	754	**11**	657	**36**	690	**61**	716	**86**	759
12	660	**37**	688	**62**	713	**87**	757	**12**	659	**37**	691	**62**	718	**87**	761
13	663	**38**	689	**63**	714	**88**	759	**13**	661	**38**	692	**63**	719	**88**	763
14	664	**39**	690	**64**	715	**89**	761	**14**	662	**39**	693	**64**	720	**89**	766
15	664	**40**	691	**65**	716	**90**	765	**15**	664	**40**	694	**65**	722	**90**	769
16	665	**41**	692	**66**	717	**91**	768	**16**	666	**41**	695	**66**	723	**91**	772
17	667	**42**	693	**67**	718	**92**	771	**17**	667	**42**	696	**67**	724	**92**	776
18	668	**43**	694	**68**	720	**93**	776	**18**	669	**43**	697	**68**	726	**93**	780
19	669	**44**	695	**69**	722	**94**	779	**19**	670	**44**	698	**69**	727	**94**	785
20	671	**45**	696	**70**	724	**95**	787	**20**	672	**45**	699	**70**	729	**95**	790
21	672	**46**	697	**71**	725	**96**	795	**21**	673	**46**	700	**71**	730	**96**	796
22	673	**47**	698	**72**	726	**97**	803	**22**	675	**47**	702	**72**	732	**97**	803
23	674	**48**	699	**73**	728	**98**	814	**23**	676	**48**	702	**73**	733	**98**	812
24	674	**49**	699	**74**	729	**99**	847	**24**	677	**49**	703	**74**	735	**99**	813
25	675	**50**	670	**75**	730	**100**	878	**25**	679	**50**	704	**75**	737	**100**	878

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

TABLE 11

Comparison of Hawai'i and National Scaled Scores of the Stanford 8 for Tenth Grade Total Reading

Hawai'i Norms–10th Grade Total Reading								National Norms–10th Grade Total Reading							
%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*	%ile	*SS*
1	531	**26**	653	**51**	677	**76**	704	**1**	621	**26**	661	**51**	686	**76**	710
2	616	**27**	654	**52**	678	**77**	705	**2**	624	**27**	662	**52**	686	**77**	711
3	620	**28**	655	**53**	679	**78**	706	**3**	627	**28**	663	**53**	687	**78**	712
4	622	**29**	656	**54**	680	**79**	707	**4**	629	**29**	664	**54**	688	**79**	713
5	625	**30**	657	**55**	681	**80**	708	**5**	631	**30**	665	**55**	689	**80**	715
6	627	**31**	658	**56**	682	**81**	710	**6**	633	**31**	666	**56**	690	**81**	716
7	629	**32**	659	**57**	683	**82**	712	**7**	635	**32**	667	**57**	691	**82**	717
8	631	**33**	660	**58**	684	**83**	713	**8**	637	**33**	668	**58**	692	**83**	719
9	633	**34**	661	**59**	685	**84**	715	**9**	639	**34**	669	**59**	693	**84**	720
10	634	**35**	662	**60**	686	**85**	716	**10**	640	**35**	670	**60**	694	**85**	722
11	635	**36**	663	**61**	687	**86**	717	**11**	642	**36**	671	**61**	695	**86**	723
12	637	**37**	664	**62**	688	**87**	720	**12**	643	**37**	672	**62**	696	**87**	725
13	638	**38**	666	**63**	689	**88**	721	**13**	645	**38**	673	**63**	697	**88**	727
14	640	**39**	667	**64**	690	**89**	724	**14**	646	**39**	674	**64**	698	**89**	729
15	641	**40**	667	**65**	691	**90**	726	**15**	648	**40**	675	**65**	699	**90**	731
16	642	**41**	668	**66**	692	**91**	727	**16**	649	**41**	676	**66**	700	**91**	733
17	644	**42**	669	**67**	693	**92**	730	**17**	650	**42**	677	**67**	701	**92**	735
18	645	**43**	670	**68**	694	**93**	732	**18**	652	**43**	678	**68**	702	**93**	738
19	646	**44**	671	**69**	695	**94**	735	**19**	653	**44**	679	**69**	703	**94**	741
20	647	**45**	672	**70**	696	**95**	738	**20**	654	**45**	680	**70**	704	**95**	745
21	648	**46**	672	**71**	697	**96**	742	**21**	655	**46**	681	**71**	705	**96**	749
22	649	**47**	673	**72**	698	**97**	746	**22**	657	**47**	682	**72**	706	**97**	754
23	650	**48**	674	**73**	699	**98**	755	**23**	658	**48**	683	**73**	707	**98**	755
24	651	**49**	675	**74**	701	**99**	762	**24**	659	**49**	684	**74**	708	**99**	761
25	652	**50**	676	**75**	703	**100**	855	**25**	660	**50**	685	**75**	709	**100**	855

Note. Not all percentile ranks have a unique associated scaled score due to the distribution of the scores. National norm ©1991 The Psychological Corporation.

analysis of the data. Between 3rd and 6th grades the Hawai'i group increased an average of 11 Total Reading and 14 Total Mathematics scaled score points as compared to the national group. However, between 6th and 8th grades, the Hawai'i group gained 2 scaled score points less in Total Reading and 16 points less in Total Mathematics dimensions. Between 8th and 10th grades, Hawai'i students increased an average of two scaled score points above the national group in Total Reading and exhibited equal scaled score increases in Total Mathematics when compared to the gains made nationally (see Tables 12 and 13).

TABLE 12
Mean Total Reading Scaled Score Differences for Selected Cohorts

	Grades 3 to 6			Grades 6 to 8			Grades 8 to 10		
Sample	3	6	Δ	6	8	Δ	8	10	Δ
Hawai'i	591	643	52	640	662	22	666	680	14
National (Typical)	608	649	41	649	673	24	673	685	12

TABLE 13
Mean Total Mathematics Scaled Score Differences for Selected Cohorts

	Grades 3 to 6			Grades 6 to 8			Grades 8 to 10		
Sample	3	6	Δ	6	8	Δ	8	10	Δ
Hawai'i	598	658	60	657	685	28	690	710	20
National (Typical)	594	640	46	640	684	44	684	704	20

Discussion

The primary purpose of this study was to analyze the standardized test score data for students in Hawai'i in order to evaluate academic performance within the state. Statewide norms for Hawai'i's public-school students were developed by grade level in order to provide an indicator of Hawai'i "normal" performance. The availability of local norms enables students in Hawai'i to be compared to the performance of a relevant heterogeneous population.

Closer inspection of the Hawai'i norms revealed that at all four grades tested, Hawai'i students did not perform on par with the national normative group. Hawai'i students failed to perform on par in reading with their national counterparts yet were relatively equivalent in mathematics performance. Hawai'i reading norms were lower at every grade level, especially Grades 3 and 8. However, Hawai'i mathematics norms showed Hawai'i students exceeding national norms in the upper quartile in Grades 3, 6, and 8. Hawai'i and national Grade 10 mathematics norms were very similar. In mathematics, Hawai'i students generally performed much closer to their national counterparts.

The longitudinal cohorts made greater gains in achievement from 3rd–6th and 8th–10th grades than their national counterparts, while the 6th–8th grade group made lesser gains. It is interesting that while gains between Grades 6 and 8 were not as substantial as the national normative gains between these years, the Grade-3-to-6 cohort as well as the Grade-8-to-10 cohort gains were at or above national normative gains. These findings are compatible with previous research (Chin-Chance et al., 1996a; Gronna et al., in press; Lai et al., 1994). The variables that can account for the larger or smaller gains relative to the national norms in Stanford 8 reading scores have not yet been identified or evaluated. Perhaps the differences in scores between grades could be related to school philosophies, perceived self-efficacy, students' background characteristics, motivation, or gender.

Since the results of our study are based on the entire public-school population at targeted grades, it is not logically appropriate to use statistical significance testing. Rather the differences reported should be viewed in terms of only educational significance. Undoubtedly the Grade-3-to-6 cohort differences are large enough to represent relatively large changes in relative rankings between Hawai'i and national norms, while the two- to three-point differences in the Grade-8-to-10 cohort would represent relatively minor changes in relative rankings. These analyses and norms provide additional tools to improve the understanding of Hawai'i student performance relative to their mainland counterparts.

Summary

These special norms can provide additional insight for understanding student performance and can be used to adjust curriculum and instructional services for students within the group. The Hawai'i norms developed in this study more accurately reflect the demographic student characteristics of Hawai'i's public school students than the national or Pacific region norms.

The Hawai'i norms are based on a population much larger than the Stanford 8 sample and are more current.

The Hawai'i norms can provide additional information about how well individual students are performing in comparison to students who are similar to them on important characteristics such as gender, ethnicity, and age. The Hawai'i norms could be used to further identify the influence of gender and age on achievement measured by the Stanford 8. The possible finding could influence school-entrance age requirements, curriculum, and teaching styles. Additionally, the Hawai'i norms could be compared to the Stanford 8 norms of the Pacific region for further evaluation of achievement within the Pacific Basin.

One must be wary of comparing the results of students in Hawai'i who take the Stanford 8 to the national norm. Both local and subgroup norms allow for comparisons only to other members within that specific subgroup or local population and cannot be interpreted as if they were national norms. Use of these norms does not imply that the more traditional norms are incorrect. It should be viewed from the standpoint that these norms provide additional interpretive tools for understanding students' performance in Hawai'i.

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Pacific Islanders in Higher Education: Barriers to Recruitment and Retention

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Pacific Islanders are significantly underrepresented in higher education. In this paper the authors discuss the need to recruit and retain more Pacific Islanders into higher education institutions in the State of Hawai'i. They also identify barriers to Pacific Islander student recruitment and retention by utilizing student enrollment and matriculation data and information from student surveys and Pacific Islander focus groups. In addition, they describe a University of Hawai'i at Mānoa program's attempts to recruit and retain Pacific Island students and discuss current and potential strategies to increase Pacific Islander recruitment and retention.

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As a new century dawns, changes in the nation's population include a longer lifespan, a growing and diverse workforce, and an increasing multicultural population. As a result, there is a rising need to counter rigid stereotypes and prejudice related to race, ethnicity, gender, sexual preference, age, and disability. The diverse population particularly has implications for eliminating the substantial minority-majority educational gaps existing in U.S. schools (Miller, 1995).

In the State of Hawai'i, Asian/Pacific Islanders comprise the majority (62%) of the State population compared to 3% of the U.S. national population. Of the 28 ethnic groups included in the Asian/Pacific Islander category, the largest are Japanese (22.3%), Filipino (15.2%), Hawaiian (12.5%), Chinese (6.2%), Samoan/Pacific Islanders (3.5%), Korean (2.2%), and Other Asian/Pacific Islanders (2.0%). Most recently, Hawai'i is a host society to newer immigrants primarily from Southeast Asia, the Philippines, and the U.S. Pacific Basin jurisdictions, the former post-WWII Trust Territory of the Pacific Islands. The latter encompasses the Territory of American Samoa, the Commonwealth of the Northern Mariana Islands, the Territory of Guam, the Republic of the Marshall Islands, the Republic of Palau, and the Federated States of Micronesia. In fact, 52.7 % of Hawai'i's resident population in 1990 was foreign-born (State of Hawai'i Department of Business, Economic Development and Tourism, 1992).

In this article, the designation of "Pacific Islander" refers to individuals claiming residency and/or citizenship in the U.S. Pacific Basin jurisdictions of American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, the Federated States of Micronesia (Pohnpei, Yap, Chuuk, Kosrae), Palau, and the Marshall Islands. In terms of race, Samoans are considered Polynesian, whereas Chamorros and Carolinians (Guam and the Commonwealth of the Northern Mariana Islands), Pohnpeians, Yapese, Chuukese, Kosraeans, Palauans, and Marshallese are all considered Micronesian. Although the University of Hawai'i does not tabulate and maintain enrollment and matriculation data for the various Pacific Islander groups, Samoans from American Samoa and Micronesians from the U.S. Pacific Basin jurisdictions very likely represent the largest groups in the UH system (University of Hawai'i at Mānoa [UHM], 1994b). Native Hawaiians are also Polynesian but are represented in a separate category. Thus, "Pacific Islander" as used in this article generally refers to Samoans and Micronesians from the U.S. Pacific Basin.

Although Hawai'i is filled with ethnic minority restaurants, cultural centers, and small businesses, its "white collar" workplace and educational institutions still reflect traditional North American values and leadership. For example, minority faculty at the University of Hawai'i at Mānoa are actually decreasing in representation with a decline in the proportion of tenured and tenurable minority faculty from 1983–84 (32%) to 1993–94 (30%), despite avowed affirmative action and equal employment opportunity policies (UHM, 1994a). The underrepresentation of minority leaders in teaching, administration, business, and policy-level positions poses significant limitations on the achievement of long-term productivity and competitiveness of the U.S. economy and the maintenance of a humane and harmonious society (Miller, 1995).

In addition, the Asian/Pacific Islander population also disproportionately suffers from unemployment, underemployment, inadequate education, and poor health, and is in the most need of specialized services in health, education, and social welfare. In Hawai'i, a significant proportion of Samoans are either unemployed or underemployed. The majority of those employed are overrepresented in the service sector and underrepresented in professional occupations (UHM, 1994b). And while there is a critical need for Pacific Islander social workers, teachers, mental health counselors, employment counselors, law enforcement officers, and other professionals, there are few qualified applicants. Factors affecting their employment include low levels of education and training, cross cultural adjustment difficulties in the workplace, English language proficiency problems, and limited exposure to employment opportunities (UHM, 1994b).

For example, the high school graduation rate of Samoan students in Hawai'i (86%) falls below the average graduation rate (93%) of students from other ethnic groups. Factors contributing to this lower-than-average rate of educational attainment include the measurement of ability and achievement based on English proficiency, the scarcity of Pacific Islander teachers in the educational system, the lack of academic and personal counseling, and limited parental involvement (UHM, 1994b).

In addition to employment and education issues, the health of Pacific Islanders in Hawai'i is of concern. Pacific Islanders have some of the lowest immunization rates and some of the highest rates of infant mortality, dental caries, maternal medical risk, maternal substance use, diabetes, and obesity (State of Hawai'i Department of Health [DOH], 1994). They are disproportionately served by Medicaid (Title XIX), Maternal and Child Health Services (Title V), Aid to Families with Dependent Children (AFDC), and Child Welfare Foster Care. Socioeconomic data also reveal that approximately one out of every four Samoans resides in public housing projects and thus is considered at risk of becoming homeless (State of Hawai'i DOH, 1994). Further, a significant percentage of youth gang members are Samoan (UHM, 1994b).

Considering the significant proportion of Hawai'i residents who are Pacific Islanders, their impact on the State's health, education, and social welfare agencies, the lack of higher institutions in the Pacific region, and UHM's strategic location in the Pacific Basin, there is a need to improve the recruitment and retention of Pacific Islanders into higher education at UHM.

Underrepresentation of Pacific Islanders in the University

In contrast to Hawai'i's overall population, the ethnic makeup of students in its higher education institutions presents a slightly different picture. The underrepresentation of certain ethnic groups at UHM has been well documented at both the undergraduate and graduate levels. The largest groups at UHM continue to be Japanese, Caucasian, and Chinese, representing 60% of the student population, while Hispanics, African Americans, and American Indians/Eskimos/Aleuts account for the smallest proportion of students with only 2%. In comparison, Filipinos, Native Hawaiians, and particularly Pacific Islanders earning degrees at UHM are dramatically underrepresented, relative to the proportion of the population they account for in the State. These groups combined comprise only 15% of all the degrees conferred since 1987 (UHM, 1996).

Table 1 summarizes the number and percentage of degrees earned by students of Asian/Pacific Islander ethnicity at UHM from fiscal year 1987 through 1995. Over an eight-year span, the number of Pacific Islander students matriculating at the University of Hawai'i represents the smallest proportion of students within the Asian/Pacific Islander subcategory.

TABLE 1
Degrees Earned by Students of Asian/Pacific Islander (A/PI) Ethnicity at UHM From FY 1987-1995

A/PI Ethnicity	1987–1988	1988–1989	1989–1990	1990–1991	1991–1992	1992–1993	1993–1994	1994–1995	1987–1995 (%)
Grand Total	3,286	3,834	3,784	3,753	3,850	4,127	4,168	4,280	100.0
A/PI Subtotal	2,547	2,457	2,533	2,454	2,450	2,642	2,665	2,691	64.7
Pacific Islander	**47**	**53**	**48**	**47**	**37**	**63**	**61**	**52**	**1.3**
Japanese	1,345	1,257	1,237	1,218	1,134	1,168	1,151	1,105	30.4
Chinese	537	510	496	479	531	553	595	590	13.6
Korean	80	101	107	81	89	115	104	115	2.5
Filipino	185	215	246	236	266	281	286	336	6.5
Hawaiian/Part Hawaiian	164	141	192	164	190	234	232	263	5.0
Other Asian	99	100	114	123	100	113	124	117	2.8
Mixed Pacific Islander	90	80	93	106	103	115	112	113	2.6

Note. Source: University of Hawai'i, Institutional Research Office, FY 1987-1995 Reports

Barriers to Recruitment and Retention of Pacific Islanders

The low enrollment and matriculation of Pacific Islanders at UHM is significant. While two-year community colleges are established throughout the State of Hawai'i and in each of the U.S. Pacific Basin jurisdictions, the University of Guam and the University of Hawai'i are the only public institutions with baccalaureate and post-baccalaureate degree programs in the U.S. Pacific. Although teacher training programs are widely available in the region, there is a paucity of professional programs in law, medicine, or allied health fields. This lack of access to professional training has resulted in a severe shortage of indigenous professionals in health, law, engineering, and other fields (Pacific Island Health Officers Association [PIHOA], 1993). Thus, Pacific Islander students are faced with limited options in their pursuit of advanced education, particularly professional education. These data point to the fact that Hawai'i, and particularly the University of Hawai'i, is strategic in terms of population and geography to close the minority-majority educational gap within the region, thereby positively impacting its economic health.

However, there are unique barriers to minority recruitment and retention in higher education, specifically for Pacific Islanders. These barriers present a challenge to higher education institutions. The following sections identify specific barriers to recruitment and retention of Pacific Islanders, describe how a UHM program has been successful in recruiting and retaining Pacific Islander students, and discuss current and potential strategies towards increasing their recruitment and retention within the University of Hawai'i system.

Explanations for the underrepresentation of Pacific Islander students at UHM relate to the availability of financial, academic, social, familial, and peer support. In addition, other significant barriers for non-local resident Pacific Islanders relate to cultural differences in learning styles, English proficiency, and distance. Distance is a unique characteristic of the U.S. Pacific region that impacts the underrepresentation of Pacific Islander students at UHM. The region stretches thousands of miles west of Hawai'i and is located in five distinct island chains, which in turn are grouped into six separate entities. These entities are scattered across a vast area approximately the size of the continental U.S. (PIHOA, 1993). The extreme isolation of the region's tiny islands and the immense distances between the jurisdictions from Hawai'i and other urban centers create formidable barriers to pursuing higher education outside of the region.

In 1988, a group of Samoan and Pacific Islander community representatives and their colleagues in the University of Hawai'i organized themselves into a task force to identify the needs and concerns of Samoans and other Pacific Islanders in higher education and develop recommendations to address them (UHM, 1994b). Through a series of meetings with Samoan and Pacific Islander community members in Hawai'i and UHM students, the UH Task Force on Samoans and Pacific Islanders in Higher Education identified the following eight problems facing Samoan and Pacific Islander students in the UH system (UHM, 1994b):

1) The lack of Pacific Island-focused programs that provide and coordinate social, academic, or financial advice, aid, and support to Pacific Islander students;

2) Inadequate academic advising and counseling due to cultural barriers and/or lack of knowledge;

3) The lack of a specific orientation program to address their unique concerns and issues and to prepare them for what to expect in college;

4) The paucity of Pacific Islanders in leadership or professional staff positions in the UH system who could serve as mentors to new or continuing students;

5) Inadequate college preparation and little encouragement to pursue higher education while in primary and secondary school;

6) The fact that cultural, kinship, and family obligations are often prioritized before higher education;

7) The lack of communication, information dissemination, and outreach relating to educational opportunities and programs; and

8) Financial constraints.

The Hawai'i University Affiliated Program (HUAP) at UHM is one of 64 such programs nationwide that implement training and research initiatives addressing disabilities. In a focus group conducted in 1995 by the HUAP, health and education leaders representing all six of the U.S. Pacific jurisdictions identified additional barriers for non-resident Pacific Islanders pursuing higher education. Individuals who desire higher degrees beyond the associate level are faced with relocating to Guam or Hawai'i, leaving families, breaking with traditional family roles and responsibilities, changing cultural and social networks, the loss of income, inadequate financial support for education, and many other transitions (Dire, 1996). Of these, leaving families behind and the lack of family support in Hawai'i were cited as the most significant barriers.

From a systems perspective, the Pacific Islander focus group also revealed negative consequences associated with the pursuit of higher education. Often, for those few Pacific Islanders who do overcome the barriers to accessing higher education, there is a mismatch between what is learned and what is needed upon return. In other words, the education and training received are not relevant to the needs or resources of the Pacific Islands. For example, leaders in the Ministry of Health in the Commonwealth of the Northern Mariana Islands stated, "When we confront the needs for professionals in speech-language pathology, physical therapy, and occupational therapy, it would be a better fit if these personnel can use the local languages for communication with local people."

A leader from Guam in speech-language pathology stated, "The real issue of training professionals to work in the Pacific Islands is one of cultural and linguistic sensitivity. Cultural differences in the Pacific and among the island nations are very distinct. Attention to the diversity among us, the development of indigenous professionals who can become bicultural to work in local languages and cultures, and to the acquisition of expertise in a world-wide system is needed."

Another consequence relates to the "brain drain" phenomenon. As a college official from the College of Micronesia, Federated States of Micronesia explained, "They [potential professionals] go off-island actually for schooling, but when lacking financial resources, turn to work. Finding good work and good money leads one away from schooling, as observed in people who never return."

Another health official from Palau stated, "Sometimes we send people off-island for training but they never return. We need the training programs off-island to do a little career marketing and support to encourage our people to come back home and work."

A special education teacher from American Samoa added, "The problem in getting our personnel to return from off-island training is not always in the way the training is presented. In terms of coming back to the island, there must be a job waiting or the individual does not want to come back."

The need for developing and improving the professional knowledge and skills of indigenous personnel through training remains critical. The dependence on contract workers who are short-term creates gaps in services and cultural and linguistic barriers to the population served. In order to promote capacity building with personnel from local cultures and communities in the Pacific, university training programs need to work to build leadership skills among Pacific Islanders who will return home and improve local service systems. Several strategies to build partnerships with colleges and government agencies in the region are underway within University Affiliated Programs (UAPs) at the University of Hawai'i and the University of Guam including outreach training with regional colleges in American Samoa, the Commonwealth of the Northern Mariana Islands, and the Federated States of Micronesia.

Strategies to Support Pacific Islanders

The HUAP has long been successful in recruiting and retaining Pacific Islanders in higher education to study disabilities. Established in 1988, the Hawai'i UAP is part of a national network of UAPs that implement national, regional, and local initiatives through special projects that include interdisciplinary training, research, community education, and technical assistance for improved services for persons with disabilities of all ages and family members throughout the state and region. In the region, the HUAP is the "mother" program that coordinates these activities in the U.S. Pacific Basin.

Interdisciplinary training, one of HUAP's core functions, focuses on the study of disability across disciplines. The HUAP financially supports students throughout UHM to complete certificate and degree programs in many disciplines with the agreement that they will complete designated course work in "disability studies" taught by HUAP faculty as a specialty area. As stated by Pfeiffer and Kiger (1995), disability studies is similar to women's studies and ethnic studies, with training and research focused on individual characteristics and societal contexts that "enable" or "disable" individuals to live in society as others do. Not widely recognized is the fact that most people become disabled at some point in their lives. Using the definition of disabilities provided in the Americans with Disabilities Act, 30% of the population is estimated to have some type of disability.

Since 1991, the HUAP has supported a total of 487 undergraduate and graduate students primarily in Special Education/Education, Psychology, Nursing, Public Health, Social Work, Speech Pathology/Audiology, Physical Therapy, Liberal Studies, and Family Resources who completed course work in disability studies. Beyond the positive impacts of supporting significant numbers of students in a range of disciplines, the HUAP has contributed to increasing the ethnic diversity and matriculation of underrepresented minority students at UHM. In fact, 63% of all students supported by the HUAP were Asian/Pacific Islanders. Of this percentage, Pacific Islanders alone accounted for 25%. When compared to the total number of Pacific Islanders matriculating at UHM from 1991–1995, the proportion of Pacific Islanders supported by the HUAP accounts for 18%.

Strategies used by HUAP in recruitment and retention efforts of Pacific Islander students include social support, financial assistance, academic counseling, and outreach. A social network is maintained with a campus-based "home" office that addresses Pacific Islander concerns and needs. In student surveys conducted from 1994 through 1997, the majority of students from the Pacific stated that the HUAP office often served as a "home away from home" for them and contributed to their sense of community and belonging. Here, all students in the HUAP training program congregate and interact with each other and are able to foster, share, and express their cultural identity in a comfortable setting.

The student surveys also revealed the importance of financial support, which was cited as the most significant factor contributing to Pacific Islander recruitment and retention. Financial support is provided to Pacific Islander students who participate in federally funded HUAP personnel preparation projects. Financial support in the form of tuition waivers or stipends ranging from $3,000–$8,000 per student per year is allocated according to grant requirements, educational level of the student, and individual financial need. HUAP also refers students to other financial aid sources and notifies them of employment opportunities on campus and in the community.

HUAP staff provides academic support in various forms on an ongoing basis. These include advice on classes, where and whom to go to for academic counseling, editing and reviewing papers and other assignments, a quiet and comfortable place to study, and computer and technical support. The HUAP office also regularly monitors trainee progress through regular meetings on a one-to-one basis and in group gatherings.

Outreach and dissemination are done directly with health and education agencies in the Pacific Islands and via technical assistance networks in Hawai'i. Contacts and linkages are maintained with the community colleges, the departments of health, education, and social welfare, and through technical assistance providers in Hawai'i who often travel to the jurisdictions.

Summary

This article highlighted specific foci for university training programs addressed by Pacific Islander professionals, community representatives, UHM faculty, and students that promote recruiting and retaining Pacific Islander students in higher education and building bridges for them to develop skills that assist local service development when they return home. The approaches used by the Hawai'i UAP to support Pacific Islanders in higher education have shown high success rates to date in the numbers of personnel recruited and retained in programs of study leading to disability-related careers. Key strategies that were rated most highly by former trainees included financial support and academic advising. Current research addressing minority-student recruitment and enrollment has focused primarily on populations other than Pacific Islanders. The unique cultural, linguistic, geographic, and economic barriers faced by Pacific Islanders are better understood as a result of the programs such as the one described. Further evaluation and research are needed to identify the success of other supports to impact matriculation and leadership development of Pacific Islanders in their chosen field following graduation.

We recognize that identifying short-term, operationally feasible, and acceptable strategies to the above barriers is not easy. Prior to implementing strategies, further research and development are needed. The following recommendations are suggested:

1) Establish an academic accounting system that provides information about the graduation rates and distributions of grade point averages (GPA) for each ethnic group within the Pacific Islander category including Pohnpeian, Yapese, Chuukese, Kosraen, Chamorro, Carolinian, Palauan,

Marshallese, and Samoan. In addition to information on matriculation and academic success, information on different types of institutions (community college versus university), locus of institution (urban center versus neighbor island), and on different academic majors (e.g., science and engineering versus education) would reveal the relationship between academic preparation and other factors to the graduation rates and GPA distributions for the Pacific Islander subgroups. An adequate accounting system would provide information about how under prepared, adequately prepared, and very well prepared Pacific Islander students perform academically in different institutional circumstances. This accounting system has the potential for leading administrators to focus more attention on how to meet the needs of well prepared minority students as well as to use a more empirical approach for planning and evaluating their minority support efforts, regardless of the student's level of preparation (Miller, 1995).

2) Examine educationally important cultural differences among Pacific Islander subgroups in order to gain a better understanding of how cultural experiences and home, school, and community experiences interact. This could be accomplished through studies focused on different instructional strategies, family and cultural obligations, peer networks, parent-teacher relationships, and other studies.

3) Develop an information system to monitor the academic achievement patterns of Pacific Islanders. Miller (1995) advocated expanding the National Assessment of Educational Progress (NAEP) testing program to include gathering more resource data on minority students than is typically done now. A similar testing program can be developed for tracking and comparing Pacific Islander subgroups. Information could include parents' education levels, family-income data, friendship networks, geographic mobility of students' families, cultural attitudes and beliefs toward education, and "higher education readiness." In addition, information on employment and educational histories of adult populations could be gathered to gain insight into how academic skills and credentials shape early work force opportunities (Miller, 1995). Such a system would provide needed data on academic achievement patterns and trends of Pacific Islanders and highlight linkages between the educational performance of subgroups and their ethnic integration and economic well-being.

Note

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Tutoring Southeast Asian Students at a Social Service Site

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This study provides an analysis of tutoring and other educational programs offered for Southeast Asian refugees at a social service site. Data were gathered by a five-person team of observers-as-participants, who took field notes and wrote memos. Staff members were interviewed, and clients wrote short essays. Data from observations, memos, interviews, and clients' writings were content analyzed. Two elements that emerged from the analysis are the supportive climate and the teaching occurring in tutoring, English as a Second Language (ESL) classes, and informal play. The program evaluation is presented, problems encountered during tutoring are explained, and implications for educators are discussed.

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Southeast Asian refugees represent a growing minority population in the United States. A large number of these refugees, especially Cambodian, Hmong, Laotian, and Vietnamese, reside in Central California. In 1989, members of local colleges, in cooperation with social service providers, established a volunteer community center called The BRIDGE. The goal of The BRIDGE is to bring friendship and help to the refugees and to provide a venue for college and university students to carry out service learning (engagement in volunteer community service, such as tutoring in specific topics, English literacy, citizenship classes, and crafts).

This study focused on tutoring and other educational programs at The BRIDGE. Understanding the factors which both facilitate educational efforts and pose difficulties would be useful for educators as they design educational programs, such as English as a Second Language (ESL) programs that include Southeast Asian refugees. Successful educational programs are an important avenue for acculturation of Southeast Asian refugees and a means by which they can learn the language and acquire the skills necessary to secure jobs.

Theoretical Background

The cultural values and communication patterns of Southeast Asian refugees differ significantly from those of English-speaking Americans. Although Southeast Asians represent a variety of unique cultures, each with its own traditions and language, similarities in values are evident among these groups in comparison to the American culture. Furthermore, the various Southeast Asian refugee groups all face similar social, economic, and cultural adjustments in the U.S.

Value and Communication Differences

The American culture differs from Southeast Asian cultures on the individualism/collectivism dimension of culture (Hofstede, 1980). In individualist cultures such as the U.S., decisions are made with minimal consideration given to groups other than one's nuclear family (Jandt, 1995). This is contrasted to Southeast Asian cultures where commitment to the group is paramount (Ebihara, Mortland, & Ledgewood, 1994). The basic family unit for Southeast Asians is an extended one that includes parents, grandparents, married children, aunts, uncles, and other relatives all living in the same household or close proximity.

Southeast Asian cultures and American culture also differ in power distance. High power distance societies maximize differences between people (Hofstede, 1980). For example, in the family, children are dependent on parents and elders, and in education, teachers are highly respected and all-knowing. The Southeast Asian cultures are higher in power distance than the American culture. This is seen in the hierarchical family structure of Southeast Asians (Lim, 1994) and their preference for more distance between teachers and students in educational settings (Lau & Longmire, 1994).

Differences also exist in verbal communication styles between Southeast Asian refugees and English-speaking Americans. Learning English is a barrier to adjustment for Southeast Asians (Lim, 1994). One aspect of language learning concerns the use of slang. Whereas Americans often use slang, Ebihara et al. (1994) suggested that Southeast Asian refugees are particularly aware of speaking correctly in all situations. Speaking correctly is tied to the concept of *face*, "the need people have to a claimed sense of self-respect in any social interactive situation" (Ting-Toomey, 1994, p. 362). Cohen (1991) suggested collectivistic cultures are more sensitive to *face*:

> Given the importance of face, the members of collectivistic cultures are highly sensitive to the effect of what they say on others. Language is a social instrument—a device for preserving and promoting social interests as much as a means for transmitting information. (p. 26)

Review of Tutoring Programs

A review of the literature on tutoring provides examples of a variety of successful tutoring programs for differing age groups and cultural groups. Most of these programs identify students with needs, for example, students reading below their grade level, or students with failing grades or poor work habits. The programs vary in structure. Furthermore, they use either adult volunteers, peers, or teachers as tutors. Programs using adult volunteers include the Howard Street Program, a program in which adult volunteers assisted second and third grade children who needed help learning to read (Morris, 1993). Tutoring was scheduled twice a week, and tutors were trained in several language-experience teaching techniques. Adult volunteers were also used to assist students with homework at a youth center (Hall, 1993) and to help with homework and other academic and communication skills at an African American church (Scales, George, & Morris, 1997). Scales et al. trained adult volunteers in a specific technique for helping students get started on homework by understanding the directions. Juel (1996) experienced success by having college students who were poor readers tutor at-risk first and second graders in reading. Tutors met with students twice a week. Tutors also engaged in self-selected reading and wrote journals.

In addition to adult volunteers, tutoring programs successfully use peer tutors. For example, Project PRIDE used peers to work with Hispanic 7th–9th graders in basic skill development (Claus & Quimper, 1990), and a Chance to Succeed (Walter, 1991) and the Teaching Buddies program (Caserta-Henry, 1996) both trained older students to work with younger students.

Teachers were tutors in several programs. They worked with Choctaw Indian students on homework, drug education, recreation, and cultural activities (Fortune & Williams, 1991). In addition, they worked with African American students in a program based on a cognitive modeling and self-instruction approach (Tucker et al., 1995). This approach was designed to benefit both children and their parents. Children learned adaptive functioning skills and learned to break academic tasks into steps. Parents were taught stress management.

These tutoring programs reported success in improved attitudes toward school and improved test scores. Whereas most researchers attributed the improvements to one-to-one attention for students by tutors, Juel (1996) investigated why a reading program was successful by analyzing audio- and videotaped recordings of tutoring sessions. Tutoring in reading was most successful when three behaviors were present: (1) obvious affection and bonding and use of verbal and nonverbal reinforcement of children's progress; (2) many scaffolded reading and writing experiences (ones "in which the tutor enabled the child to complete a task that the child couldn't otherwise do . . . by providing a piece of information and/or segmenting the task into smaller clearer ones" [p. 283]); and (3) explicit cognitive modeling of reading and writing (taking the child through a process step-by-step).

No studies were found that focused on tutoring Southeast Asian students. With the growing number of Southeast Asian students entering schools who are struggling to adapt and learn English, information is needed as to the best methods to assist them. This study addressed this important yet unexplored area. This study is part of a larger study of communication interactions at The BRIDGE which sought to determine factors of culture which influence these interactions, to assess the conditions in which acculturation is easiest for these refugees, and to determine how English-speaking Americans can best understand the needs and values of the Southeast Asians.

The Setting

Although The BRIDGE serves all Southeast Asian refugees, it is located in an apartment complex which is home to some 90 families, most of them Cambodian. Each weekday morning, the predominant activity at The BRIDGE is meetings between Southeast Asian adult clients and cultural advisors (four Cambodians and one Hmong who speaks multiple languages). The cultural advisors give needed assistance and translation or accompany clients elsewhere, for example, to the hospital. Other activities in the morning include visits from social service agents, such as the public health nurse.

Afternoons at The BRIDGE are dominated by children and young people who come after school for tutoring, supervised play, and participation in the book club (children read books appropriate to their reading level and complete short book reviews). Volunteers, mostly from the local colleges, tutor and interact with the young clients. For adults, both beginning and advanced ESL classes are offered as well as other activities such as citizenship training. This study analyzed interactions during tutoring and other educational programs to determine factors which both facilitate education and pose problems that require addressing.

Method

This study was conducted by a five-person observer-as-participant team. This team included four females and one male from a variety of cultural backgrounds: two Caucasians, one Native American/Caucasian, one African American, and one Japanese foreign-exchange student.

Prior to actual data collection, the team of researchers was trained as observers-as-participants. An observer-as-participant is "one who identifies himself or herself as a researcher and interacts with the participants in the social process but makes no pretense of actually being a participant" (Babbie, 1989, p. 266). Training also included instructions on taking field notes (Li, 1981) and writing memos as outlined by Strauss and Corbin (1990) .

The research team completed 120 hours of observation. After an initial period of one month of individual observations, the team met bi-monthly to discuss observations and analyses. From these discussions, the team generated categories of interaction using open coding, a process of "discovering categories" by "grouping concepts that seem to pertain to the same phenomena" (Strauss & Corbin, 1990, p. 62).

In addition to the observations, three in-depth interviews were conducted of staff at The BRIDGE: the site coordinator, a Cambodian cultural advisor, and a student who had begun as a volunteer but had recently been hired as part of the staff. Interviews consisted of open-ended questions and follow-up probes. Interviews were recorded and transcribed. Furthermore, Southeast Asian clients, mostly children, wrote short essays on the topic "What is The BRIDGE?" Finally, service learning journals of university students who served as tutors were reviewed for successes and difficulties experienced in tutoring.

The field notes, memos, interview transcripts, and client writings were content analyzed. Two professionals grounded heavily in intercultural communication coded these data into the categories generated by the research team. Because several categories appeared to be interrelated, these were collapsed, resulting in an inter-coder agreement of 93%. Of the categories, two apply to this analysis of tutoring and other educational programs at The BRIDGE: Supportive Climate and Teaching.

Discussion

Similar to the tutoring program described by Juel (1996), The BRIDGE predominantly uses college-student volunteers, although other adults also participate. Whereas many tutoring programs reviewed provided for regularly scheduled tutoring sessions with students who had been identified as "at-risk" (Claus & Quimper, 1990; Juel, 1996; Morris, 1993; Tucker et al., 1995), The BRIDGE provides for drop-in tutoring similar to other homework assistance programs (Fortune & Williams, 1991; Hall, 1993; Scales et al., 1997). Other than viewing three hours of orientation tapes about Southeast Asian cultures, volunteers at The BRIDGE receive no specific training for tutoring as is found in many other programs (Caserta-Henry, 1996; Juel, 1996; Morris, 1993; Scales et al., 1997; Tucker et al., 1995).

Two elements that emerged from this analysis describe the tutoring and other educational programs at The BRIDGE: Supportive Climate and Teaching.

Supportive Climate

Research has indicated that a climate conducive to learning is beneficial for students completing homework (Hall, 1993). This type of learning environment is present at The BRIDGE and is manifested in the way people are treated. The climate at The BRIDGE is supportive; that is, it is one in which participants feel valued, where their identity is validated (Adler & Towne, 1987).

Feeling Comfortable. Clients, tutors, and the research team all described The BRIDGE as a place where they felt comfortable. Clients used the expressions "a safe place," "a second home," and said the site coordinator was "like a mom." The response of tutors and researchers was exemplified by a tutor after her second visit: "I really felt good by the end of the time I was there." Furthermore, several of the clients described this comfortable environment as a "best friend," a place that provides escape from problems, as is seen in the words of a youth:

> The Bridge and the people of the Bridge are my best pal since I have started to live on the land that I have been lost in. . . . The Bridge is the place I can shed my domestic problems for awhile while I jump in to play with other kids. Sometimes the Bridge's door closed for the weekend, I may sneak out to sit on its front grass in order to feel that there is a place that I can turn to when I am feeling blue.

Attending and Listening. The supportive climate at The BRIDGE is fostered through individual attention given to clients and the careful listening that is exhibited. This was seen, for example, when a Cambodian man was talking about his homeland. The co-director listened intently, hardly moving, for over an hour. She asked questions at times and made a few comments at the end, but basically she listened. This patience and unhurriedness was repeatedly exhibited by the staff as they tutored or interacted informally with clients.

Another example of individual attention and listening was provided by the director of the book club. When she arrived, children would run to meet her and line up for attention. As they submitted book reviews, she carefully read each one, making a positive comment about some quality in each paper, for example, a picture or a sentence. The children waited patiently for their turn, for each one received that individual attention.

Complimenting and Praising. The supportive climate is also manifested through the compliments and praise which staff and tutors regularly give to clients. A staff member who worked with the children, described her most important activity as "making them feel special and building their self-esteem." Tutors and researchers remarked that compliments were often met with embarrassment or were discounted. For example, a tutor watched a high school student practicing for a typing test: "I watched for awhile and complimented her on her progress. I told her she typed better than me, and she just smirked and said, 'yeah right.' She didn't seem to believe me." Similarly, the co-director complimented a girl who had done well on a biology test. The girl seemed embarrassed and giggled. Then she proceeded to tell the co-director that it was "no big deal."

Although compliments and praise seemed to be appreciated, Southeast Asian children may not be used to this treatment, hence the embarrassment and discounting. A Cambodian cultural advisor explained that "in Cambodian, parents do not communicate with children a lot. They are afraid of spoiling their children by communicating a lot, giving awards or encouragement."

Compliments were extended from clients to staff and tutors when clients showed appreciation for the help. A five-year-old boy, who needed help with his numbers and alphabet, was initially hesitant to work with a tutor. But by the end of the afternoon, the tutor remarked, "He was very happy I had helped him. He asked when I was coming back. It made me feel proud, and he wanted that after only a short hour of working with him."

Reciprocal Learning. The final feature of the supportive climate is seen in reciprocal learning. People validated one another by learning each other's language and customs. Teaching words in other languages was a common occurrence. Tutors and researchers learned Cambodian, and young Southeast Asians learned Spanish and Japanese, as well as English. A unique example of this reciprocal learning occurred when an English-speaking graduate student, fluent in Cambodian, helped Cambodian youth with formal Cambodian writing, while they helped her with her Cambodian pronunciation.

In addition to language, cultural customs were shared. In one instance, the instructors of a parenting class had scheduled a session on Cambodian New Year. When students said they could not come, the instructors used the opportunity to learn about how the Cambodian New Year was celebrated.

Reciprocal learning is an integral part of The BRIDGE's structure. The site coordinator explained that "many of the grants funding The BRIDGE were set up that way." A staff member described it this way: "Everyone learns something from everyone, across the cultures. It's incredible, it's like a mesh net. Like a web, all different learning going on." This interest in learning about others validates the identities of all present, greatly contributing to the supportive climate.

Teaching

Tutoring. Tutors are available at The BRIDGE for whoever needs assistance. Children and young people come for help with assignments and term papers. Tutors are paired with students upon their arrival, not according to any pre-set schedule. Tutoring is done in a small area in which there may be as many as 15 people playing games, doing crafts, or reading.

The college-student tutors encountered problems, such as the lack of private space and pre-set schedules. Another problem occurred in the initial contact. Southeast Asian young people often entered and stood still, waiting to be asked if they needed help. The American tutors were not accustomed to this and expected to be asked. At The BRIDGE the volunteers often needed to learn to offer assistance, or the site coordinator made the initial pairing.

During tutoring sessions, tutors sat next to the students because sitting across the table brought direct eye contact, which made the Southeast Asians uncomfortable. When tutoring began, tutors asked students to tell them about the assignments to be completed. The young Southeast Asians often gave only a very general reply such as "I have to write a 10-page paper." They offered no topic or details about the assignment. This lack of specifics provided difficulties for the tutors, since the tutors had no way of knowing what was expected by the teachers.

As they assisted students with term papers and homework, the difficulty mentioned most often by tutors was language based. Southeast Asian students had difficulty putting ideas into their own words or reading from a book and summarizing the ideas. They preferred to write down what the tutor said or copy from the book.

Successful tutoring appears to be a very delicate balance between providing enough information so the student does not get discouraged and teaching the student to take responsibility for the assignment. A Southeast Asian young adult explained that when students do not know the answers, "they feel ashamed and do not want to ask her [the tutor] anymore. Giving answers means making them feel comfortable." The most successful tutors provided some answers and posed questions and then searched for answers with the students, either in books or by using maps and globes.

The problems experienced by tutors when students could not explain assignments to them can be explained in several ways. Because of the power distance in Southeast Asian cultures, teachers are seen as all-knowing and are to be greatly respected. Children and young people do not question authority but look to teachers for knowledge. If students do not understand an assignment given in school, they may not ask for clarification. This would show disrespect for the teacher and would cause a loss of face. Another explanation could stem from the language barrier. Because of the language barrier and their lack of understanding of the subject matter, Southeast Asian students often may not know what the teacher wants and, therefore, cannot explain the assignment to the tutor.

The problems evident in academic tutoring are not present in physical projects such as crafts and cooking. In these physical activities, Southeast Asian students are shown how to do something and then left to do it themselves. They complete these projects very capably after the demonstration.

ESL Classes. The ESL classes at The BRIDGE are a combination of acculturation and language training. Students copy English sentences, read aloud, and receive explanations of word meanings and grammar. One ESL class is taught mostly in Hmong. The instructor commented that most of the students come "because I speak their language." Self-disclosure is one of the approaches to teaching ESL used by an English-speaking instructor. She writes stories about her life on the board which students copy and use as the basis for reading and vocabulary. These self-disclosures teach American norms and build warm personal relationships between teacher and students.

In addition to learning the English language, adults learn valuable parenting information in their ESL classes. For example, an employee of the local school district came to answer questions parents had regarding their children. One mother said that her son told her he needed a computer in order to do his homework. The school representative explained that the school had computers; therefore, this was not a legitimate excuse for not doing homework.

Informal Play

Southeast Asian children come to The BRIDGE to play and to participate in organized games, crafts, and the book club. An important ingredient of the informal play that occurs is that the tutors read to the children, and the children read to the tutors. Through membership in the book club, children are encouraged to read books at their appropriate reading level and write brief book reviews. Nearly all of the Southeast Asian young people who wrote essays on The BRIDGE mentioned that they liked The BRIDGE because of the reading. Repeated comments were ones such as these: "I like the Bridge because they read to me," and "I love to read at the Bridge a lot because they use an indoor voice."

Evaluations of The BRIDGE Educational Programs

The success of The BRIDGE as a supportive climate is seen in the writings of the young people. One young person said,

> Sometimes my family act like they don't care a lot about me. They like my sister better. The Bridge likes me. They think the things that I do are good. The teachers are happy to me. Then I can go home.

The supportive climate is also evident from the behaviors of the adults. The site coordinator described it in this way:

> It's been very nice to know the confidence that they have in The BRIDGE. They will come here before they have to go to the police department. For example, if they have a run away, they will come here to get help to go to the police department for their problems. They come here for a lot of very serious matters like legal problems.

The success of the tutoring program at The BRIDGE is seen in the responses of clients. They described The BRIDGE as a place where they "can get help with tough homework," and "study for tests, because it's also a quiet place." The tutors evaluated themselves with varying degrees of success. Some noted that lack of tutoring knowledge hindered them. One tutor remarked, "I found some difficulties in explaining some of the things I wanted them to learn maybe because I did not have some of the other answers that it takes to teach."

The ESL classes are effective at The BRIDGE because they provide a supportive learning climate, they include a teacher who speaks the students' language, and they offer useful information on societal norms and parenting practices. Furthermore, Southeast Asian adults are able to concentrate on learning because they know their children are being supervised and taught on the premises. An adult commented that without The BRIDGE, "I myself would be quit school for a long time." A young Southeast Asian attested to the success of the program in this way: "I come with my mom to the Bridge because she has class every week. The Bridge help her on her reading and her language. Now she speak better than before."

The characteristics of the informal reading and book club include many ingredients of successful reading programs that have been identified in previous research: reading to children, rereading familiar material, reading for comprehension, writing short stories, establishing affectionate bonds, and providing positive reinforcement to children (Caserta-Henry, 1996; Juel, 1996; Morris, 1993).

Client appreciation for The BRIDGE was summarized by one person who reflected on what would happen if The BRIDGE closed:

> If there is a day like that will happen, there will be many Asian who will have to bury their fear and hold on to the tremble of their hearts. It will make them more difficult to move on without the BRIDGE's help.

Implications for Educators

It appears that the supportive climate and easy access are major reasons why Southeast Asian clients feel comfortable coming to The BRIDGE for help. Providing services in the communities of these people is important because of the ready access and confidence that can be established through frequent interactions. It is also important to have translators available who speak their languages and whom they can trust. Difficulties can be encountered when children are asked to translate for their parents. This disrupts the traditional parent-child relationship and can hinder the flow of information since children cannot report information to parents that is negative or suggests that parents' behavior requires changing.

The problems evident in tutoring indicate that teachers must be especially clear in providing assignments to Southeast Asian students as well as all other students with limited proficiency in English. Assignments should be provided clearly in writing because the students may not ask for clarification out of respect for the teacher or may not have the language or subject-matter knowledge to ask for clarification. If the assignments are clearly indicated in writing, these students can get help from tutors more easily.

Limitations and Future Research

One of the limitations of this study is that it analyzed interactions between the general categories of "Southeast Asian clients" and "American tutors." The Southeast Asians at The BRIDGE include people from a variety of unique cultures. Similarly, the American tutors represent a variety of ethnic backgrounds. Studies which analyze the interactions of specific cultural groups may yield very different results. Another limitation of this study is that it relied on the observations of researchers who bring biases with them. The research team was selected to include members from a variety of cultural backgrounds in an attempt to lessen research bias from a single perspective, but this does not eliminate researcher bias. As with any observational study, replication is a problem. Furthermore, this study was an exploratory study of one specific social service site. Further research is needed to determine if these findings are consistent with findings in other contexts.

In comparison to many other structured tutoring programs, The BRIDGE program is available on a voluntary basis for students needing assistance. A comparison of the effectiveness of a voluntary program as compared to programs that identify "at-risk" students and teach them in regularly scheduled sessions would be useful to determine how best to meet student needs.

Most tutoring programs include training for tutors. Although college students view three hours of orientation tapes, they receive no specific tutoring training. Such training could be considered. However, before training programs can be developed for tutors to Southeast Asian students, research is needed in understanding how Southeast Asians best learn in the tutoring relationship. Research which analyzes specific methods and communication within the tutoring sessions, such as that done by Juel (1996) on the most effective tutoring techniques for teaching reading, would add much to this understanding. This study did find that to save face, the Southeast Asian students need to be given at least some of the answers during tutoring, so they will not be too ashamed to seek help again. Since Southeast Asian students did not have any difficulty completing crafts and other physical activities, studying the difference between this type of learning and academic learning may lead to new techniques for teaching and tutoring.

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Ka Lama o ke Kaiāulu: Research on Teacher Education for a Hawaiian Community

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This article introduces a three-year research project designed to answer the question of how schools can better meet the educational needs of individuals from underrepresented groups. By examining the life experiences and professional development of teachers of diverse backgrounds, this project will contribute to a better understanding of issues of educational equity and the improvement of pre-service teacher education programs. In this article, overviews of two research studies are presented. The first is a case study that examines the themes of cultural identity, schooling, and literacy in the life of a pre-service teacher of Hawaiian ethnicity, and the second is a set of case studies that examine the supports and barriers encountered by five Hawaiian women throughout their educations. Both studies contribute to suggestions on how to recruit individuals of diverse backgrounds to the teaching profession, how to provide culturally responsive teacher education programs, and how to support these new professionals once they enter their own classrooms.

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> In high school, I was never motivated enough to go to college. I looked at education as a waste of time and too hard for me to deal with. I felt I could survive without going to college. What made me eventually change my mind about higher education was that I wanted to be a role model for my brothers and sisters. I did not want them to face the many dilemmas about education. I wanted them to understand where education could take them and what education could do for them. ('Iwalani, personal narrative)

> The teachers I had, especially in elementary school, weren't culturally sensitive to my needs as a Hawaiian student. The majority of my teachers were not Hawaiian and they seemed to classify me into the "slower" category. My third grade teacher once told me that I was a typical lazy Hawaiian and would not amount to much. (Bernice, personal narrative)

Comments such as these are familiar to teacher educators in Hawai'i. The question of how schools can better meet the educational needs of students who are of diverse ethnic backgrounds (such as Native Hawaiian, African American, Samoan, or Filipino), who come from low-income families, and who speak first languages other than standard English, has long been debated. Over the past two decades, a body of research focusing on the learning of young Native Hawaiian students has provided insights into the attitudes and instructional practices of teachers successful in bringing about high levels of literacy achievement (Au & Carroll, 1997; Au & Mason, 1983; D'Amato, 1988). While valuable information has been gleaned from these studies of established teachers of Hawaiian students, research examining the effective recruitment and preparation of pre-service teachers, the future teachers of these same students, is in its infancy.

Although Hawaiians make up approximately 18% of the state's general population, along with 24% European Americans, 20% Japanese Americans, and 11% Filipino Americans, they and Filipino Americans are the most underrepresented groups in the teaching force in Hawai'i's public schools. In terms of student achievement, European and Japanese American students as groups score considerably higher on standardized tests than Hawaiian and Filipino American students. Typically, Hawaiians as a group score in the bottom quartile on standardized tests of reading and mathematics (Kamehameha Schools Bishop Estate, 1993).

A factor contributing to the challenges Hawaiian students face is an absence of role models, specifically, Native Hawaiian teachers from their communities. An evaluation of selected schools with a high number of Hawaiian children showed the following distribution of teachers by ethnicity: 66% Japanese, 17% Chinese, 8.5% White, and 8.5% Hawaiian (Tikunoff, Ward, & Van Broekhuizen, 1993). The far-reaching effects of this and other well documented barriers for students of diverse backgrounds in the public schools are evident in the distribution of University of Hawai'i at Mānoa graduates by ethnicity for the 1995-96 academic year: 24% Japanese, 22% White, 15% Chinese, 7% Filipino, and 7% Hawaiian (University of Hawai'i Institutional Research Office, 1996a).

Ka Lama o ke Kaiāulu (Ka Lama) is one of the teacher education cohorts in the College of Education at the University of Hawai'i. Established in 1995, the purpose of Ka Lama is to improve the education of Hawaiian students in public schools on the Leeward Coast of the island of O'ahu, by recruiting and training teachers with a commitment to the area. The Leeward Coast has a high rate of poverty. Two thirds of the students are Hawaiian, as compared with no more than 10% of the teachers. Many teachers do not live in the area, and there is a high rate of teacher turnover.

Research on Ka Lama is contributing to a better understanding of issues of educational equity and to the improvement of future pre-service teacher education programs. The research questions central to the project and their rationale are

1. *What factors influence Hawaiians and members of other underrepresented groups to enter the teaching profession?*

The shortage of teachers of diverse backgrounds is a long-standing problem that begs to be addressed (King, 1993). Intensive efforts to publicize Ka Lama took place in the process of recruiting the first cohort of pre-service teachers. Information about Ka Lama was disseminated through community meetings, newspaper articles, flyers posted at shopping centers, and talks given at two community college campuses and a high school. Yet only a handful of applications were received from residents of the Leeward Coast. Further investigation revealed that few residents had enough college credits to be admitted as juniors to the College of Education and that few high school students had ever entertained the idea of becoming teachers. In the first cohort, only 6 of the 28 pre-service teachers were residents of the Leeward Coast (however, the cohort included 15 Hawaiian pre-service teachers, an exceptionally high proportion). Research on the factors that influence Hawaiians and members of other underrepresented groups to become teachers will be useful in shaping efforts to encourage residents of the Leeward Coast to enter the profession.

2. *What are the features of a pre-service education program that will prepare Hawaiians and others of diverse backgrounds to become successful teachers in schools in their own communities?*

The Ka Lama pre-service teachers receive the academic preparation, professional skills and guidance, and emotional support needed to complete the program successfully. Their progress through the program and their responses to various classroom activities and assignments are being thoroughly documented and analyzed. Data collected to date show their growth in areas such as classroom organization and management;

instructional strategies and assessment; philosophy, theory, and research in education; and community involvement. Observations of lessons taught by the pre-service teachers provide another source of information on their progress. Analyses of this wealth of materials will show what they have learned, the activities that best promote their learning, and how they perceive their own development as teachers.

3. How can mentor teachers best be involved in a pre-service program?

Research in teacher education suggests that pre-service teachers are greatly influenced by their mentor teachers (McIntyre, Byrd, & Foxx, 1996). This effect is likely to be very strong for the Ka Lama pre-service teachers, due to the extensive amount of field experience required in the program. During their first three semesters, pre-service teachers spend the equivalent of a day a week working in the classrooms of their mentor teachers. During student teaching, they follow the same classroom schedule as the mentor teachers. With this amount of contact time, mentor teachers stand to have a greater influence on pre-service teachers than any of their university instructors. Research on the role of the mentor teacher in promoting pre-service teachers' professional development is critical in the shaping of Ka Lama. Of special interest are the approaches of mentor teachers who are residents of the Leeward Coast who have a long-term commitment to improving education in this community.

4. How are the themes of cultural identity, schooling, and literacy played out in the life stories of the pre-service and mentor teachers?

The research base on the experiences and professional development of teachers of diverse backgrounds is virtually nonexistent. Some research has been conducted with African American teachers, somewhat less research with Latino teachers, and almost none with Asian American teachers and teachers from indigenous groups. Ka Lama pre-service teachers and their mentor teachers come from a variety of cultural backgrounds, including Hawaiian, Japanese, and Filipino. The collection of information on their lives and development as teachers allows for the exploration of issues such as cultural identity, experiences with schooling, literacy development and perceptions of themselves as readers and writers, and the effects of these factors on their approaches to classroom instruction.

Literature Review

Intellectual Tradition of the Project

This research project draws upon the broad intellectual tradition of constructivist or interpretivist research (Schwandt, 1994). Central to the constructivist paradigm is the view that different groups may experience different social realities, depending upon their life histories and circumstances (Guba & Lincoln, 1994). Knowledge is not seen in terms of a fixed, external reality but instead is seen to grow from the interactions of the researchers and participants. Studies of teachers' personal practical knowledge (Carter, 1990) and of teachers' life-history narratives (Huberman, 1995) are examples of this type of research.

One of the purposes of this project is to call attention to the constructions of participants from diverse cultural groups, so that their views receive some of the consideration usually reserved for the views of those from more powerful, mainstream groups. A further goal is to advocate social change in line with the findings of the research. Several bodies of research, conducted from a constructivist perspective, offer insights into the questions to be pursued in this project. These bodies of research provide information about the kinds of content and experiences to be included in a pre-service program in which teachers are being prepared to work in classrooms with Hawaiian children. They also highlight approaches likely to be useful in studying the life experiences and professional development of the pre-service and mentor teachers.

Culturally Responsive Instruction

Culturally responsive instruction fosters students' academic learning and self-esteem through teaching strategies and forms of classroom organization that build on the strengths students have gained in the home and community (Au, 1993; Au & Kawakami, 1994; Ladson-Billings, 1995). Although often unaddressed in pre-service teacher education programs, culturally responsive instruction is a well documented feature of successful instruction in many classrooms with students of diverse backgrounds (Hollins, 1982).

In their study of classrooms with Hawaiian children, Au and Kawakami (1985) found that effective teachers followed rules for participation similar to those of talk story, a Hawaiian community speech event. Talk story includes the narration of events by two or more speakers and a high degree of overlapping speech. When engaged in talk story-like reading lessons, Hawaiian children discussed many story ideas and made many logical inferences. In contrast, when engaged in conventional reading lessons, which featured one speaker responding at a time, Hawaiian children showed a high degree of off-task behavior.

In an examination of the ways in which teachers structure the relationships among students in the classroom, Jordan (1985) found that Hawaiian children benefited from opportunities to teach and learn from peers. Many of the children were raised in households where major child-care responsibilities were often assumed by older siblings, not just by parents. In the classroom, then, Hawaiian children often turned to classmates for help rather than approach the teacher. Successful teachers allowed students to help one another but also made a point of teaching the children that adult teachers were an important source of information.

Considerable research highlighting the benefits of culturally responsive instruction points to the value of studying pre-service teachers' understandings of and abilities to use culturally responsive instruction, as planned in this research project.

Development of Teaching Expertise

As well as a knowledge of students' cultures, effectiveness in teaching depends upon a knowledge of philosophies of learning and teaching, goals for student learning, and methods of instruction and assessment (Au, 1993; Grant, 1994). Numerous studies have addressed the development of instructional expertise by pre-service and in-service teachers (Carter, 1990). These include studies that explored the relationships between teachers' beliefs and practices (Richardson, Anders, Tidwell, & Lloyd, 1991) and the influence of factors such as university methods courses, mentor teachers, teaching practica, and prior schooling experiences upon teachers' professional development (Wilson & Readence, 1993).

Research on effective methods of language arts instruction and assessment in classrooms with Hawaiian children is also well established. This includes Au's (1990) case study of a teacher learning to conduct small-group, interactive comprehension discussions; Au and Scheu's (1996) case study of a teacher learning to conduct a writers' workshop in keeping with the process approach to writing (Calkins, 1994); and Au and Carroll's (1997) study of the effectiveness of constructivist approaches such as the writers' workshop.

By tapping into this existing body of research on Hawaiian children's literacy development, the present project intends to identify the features of a pre-service education program necessary to prepare individuals to become successful teachers of literacy.

Successful Teachers of Culturally Diverse Students

Much has been learned about effective instruction in recent research examining the beliefs and practices of successful teachers of culturally diverse students. Foster (1994) suggested that, when students and teachers share the same cultural background and are able to engage in productive interactions, students are likely to develop positive attitudes toward school and achieve at higher levels. A sense of cultural solidarity may develop because the teacher is recognized as a member of the students' reference group. These teachers may serve as role models and examples of professional success. They may equip students with the motivation and determination to succeed in a larger society in which they are likely to experience racism and discrimination (Foster, 1991; Ladson-Billings, 1995).

While the proportion of American children of diverse backgrounds has steadily increased, the proportion of American teachers of diverse backgrounds has not. A recent national survey showed that African Americans composed 8% of the teaching force, Latinos 3%, Asian and Pacific Americans, 1.4%, and Native Americans, 0.9% (National Education

Americans, 1.4%, and Native Americans, 0.9% (National Education Association, 1991). In general, students of diverse backgrounds may have little contact with teachers who share their cultural backgrounds (King, 1993). In Hawai'i, even in schools in which the majority of students are Hawaiians, there are few Hawaiian teachers who can act as role models (Tikunoff, Ward, & Van Broekhuizen, 1993). The present project attempts to address the shortage of educators of Hawaiian ethnicity by examining the beliefs and practices of pre-service and mentor teachers from Hawaiian and other ethnic backgrounds and using this information to determine how best to recruit and prepare successful teachers.

Teachers' Life Histories

One reason for studying teachers' lives is to foster the development of a teacher-centered knowledge base that both grows from and speaks to teachers' work as they experience it (Goodson, 1992). Another reason is to understand the influence of teachers' own experiences as pupils on their professional development. These experiences appear to exert a stronger influence on teachers' professional development than their experiences in teacher education programs (Knowles, 1992). A further reason, highlighted by Butt, Raymond, McCue, and Yamagishi (1992), is to gain a better understanding of teachers' roles in the process of educational change.

In his biographical study of five beginning teachers, Knowles (1992) found that his subjects' teaching approaches were affected by their role identity as teachers, that is, their concepts of what it meant to be a teacher. He identified the major components of teacher-role identity as family childhood experiences; teachers who served as role models; previous teaching experiences, including tutoring; and significant people and experiences at the university, particularly university instructors. He highlighted the need to understand how the life experiences of pre-service teachers can be utilized within the context of a teacher education program to promote the development of stronger teacher role identities (see also Huberman, 1995).

There are few studies of the life histories of teachers of diverse backgrounds. Research examining how life experiences inform teachers' work found teachers with a deep moral commitment to their students and a concern for social justice (Casey, 1992; Henry, 1995; Ladson-Billings, 1994). Life-history studies may also show what motivates individuals of diverse backgrounds to become teachers; to make the commitment to teach in schools in ethnically diverse, low-income communities; and to improve education in these communities. Research on teachers' life histories is a focus of the present project expected to yield important information on how to increase the number of teachers from underrepresented groups.

Multicultural Teacher Education Programs

The intention of multicultural teacher education programs is to prepare teachers to work effectively with all students, regardless of the factors contributing to cultural identity such as ethnicity, gender, primary language, and social class (Gomez, 1994; Sleeter, 1991). In a review of the literature, Grant (1994) drew several conclusions about practices likely to be effective in preparing teachers to work in schools in diverse settings. Multicultural education must be infused throughout the pre-service program. Courses should be accompanied by field experiences in culturally diverse communities, and mentor teachers and university supervisors need to be knowledgeable about the theory and practice of multicultural education. In addition, pre-service teachers need to engage in assignments that require them to analyze issues such as race, class, and gender in a critical manner (Gomez & Tabachnick, 1991; Noordhoff & Kleinfeld, 1993).

Although the present project is informed by existing research on effective multicultural teacher education programs, greatest emphasis is placed on researching and developing a model that caters to the specific and unique needs of students on the Leeward Coast of O'ahu. Of special interest is the pre-service teachers' understanding of the implications for teaching of their own cultural identities and the cultural identities of their students. University courses and related experiences engage the Ka Lama pre-service teachers in discussions of these factors and encourage them to think critically about issues of ideology.

Research and Praxis: Design of the Teacher Education Program

Cohorts of Pre-service Teachers

As mentioned earlier, Ka Lama is one of several cohorts in the pre-service teacher education program in the College of Education, University of Hawai'i. There are several characteristics common to all cohorts:

- Over a two-year period, pre-service teachers in a given cohort complete their required course work, field experience, and student teaching requirements together and develop support networks within their cohort.
- The course work is structured so as to facilitate connections across content areas and to the field.
- One or two university faculty members serve as instructors and advisors and monitor the pre-service teachers' progress through the two years.
- Each cohort is based in a host school or schools, and pre-service teachers have their field experiences in the classrooms of mentor teachers at these schools.

- Principals, teachers, and staff collaborate with university faculty in program planning, implementation, and evaluation.

While Ka Lama shares these elements with other cohorts, it also possesses several unique characteristics.

Establishing Community Ties

Because Ka Lama focuses on the educational needs of a particular geographical area, the Leeward Coast, efforts have been made to establish close ties with this community. A grant from the Hawai'i Community Foundation to the Institute for Native Pacific Education and Culture (a Hawaiian educational services organization) has supported the development of a community advisory board for the program. This same grant has enabled the hiring of instructors from the community to teach the pre-service teachers and work with university faculty. Because of its community orientation, Ka Lama seeks to work with principals and teachers in all the public schools on the Leeward Coast.

Emphasizing Themes of Literacy, Multicultural Education, and Hawaiian Culture

Ka Lama's university courses emphasize the themes of literacy, multicultural education, and Hawaiian culture. Literacy is emphasized because effective reading, writing, and critical thinking are regarded as foundational to children's success in all areas of the curriculum. Ka Lama pre-service teachers receive an introduction to the writers' workshop (Calkins, 1994) and effective writing instruction in the first semester, as part of their introductory curriculum and instruction course. In their second and third semesters, they attend language arts methods courses and learn about the readers' workshop (Au, Carroll, & Scheu, 1997) and integrated curriculum, as well as effective methods of student assessment. During student teaching, they are required to implement a writers' workshop and a readers' workshop.

Multicultural education and Hawaiian culture are emphasized because of the importance of culturally responsive instruction and Hawaiian studies in making connections between the curriculum and children's backgrounds and interests. Issues of multiculturalism are introduced in an educational psychology course (first semester), a multicultural education course (second semester), and a Hawaiian studies course (third semester). The Hawaiian studies course includes Hawaiian views of education, from ancient times to the present, and compares and contrasts these views with those of American progressive educators, including Dewey. This course includes guest speakers from the community and requires pre-service teachers to serve a two-week internship at the Cultural Learning Center at Ka'ala, teaching Hawaiian studies to groups of elementary students visiting the center.

Supporting the Professional Development of Mentor Teachers

Ka Lama has enlisted the services of a group of skilled mentor teachers dedicated to supporting its mission to improve education on the Leeward Coast. These mentor teachers work closely with the university instructors to plan and provide valuable field experiences for the pre-service teachers.

To date, mentor teachers have had opportunities to attend workshops on the Book Club approach to literacy instruction (McMahon & Raphael, 1997) and on balanced literacy instruction (Au, Mason, & Scheu, 1995). Graduate-level courses in education, particularly in the areas of literacy learning and teaching, curriculum issues, and multicultural education, are being offered to mentor teachers beginning fall 1998. This type of professional support should result in the establishment of a cadre of mentor teachers whose classroom programs will be consistent with the philosophies and practices introduced in university course work and will serve as effective models and learning environments for the pre-service teachers.

Addressing the Need for Professionals of Diverse Backgrounds With Graduate Degrees in Education

The barriers to higher education for students of diverse backgrounds are multiple. These include lower socioeconomic status, culturally biased tests used to screen college applicants, lack of role models, and difficulty mastering the mainstream culture of the education system ("Barriers seen," 1993). This situation has lead to a dearth of professionals of diverse backgrounds with graduate degrees in education to fill roles in administration, personnel preparation, and applied research.

Through the extensive recruitment, support, and retention of undergraduate pre-service teachers from underrepresented groups, Ka Lama provides opportunities for the completion of baccalaureate degrees, and in turn, prepares pre-service teachers for entrance into graduate degree programs in education. The Ka Lama courses build skills needed in graduate work by incorporating critical literature reviews, informed debates on educational issues, mini research projects, visits to graduate level classes, and attendance and presentations at local and national conferences.

Method

Participants

The participants are 28 pre-service teachers enrolled in the first Ka Lama cohort and the mentor teachers who work with them. About two thirds of the pre-service teachers are of Hawaiian ethnicity; the others are of Japanese, Filipino, Samoan, Chinese, or European American ethnicity. The mentor teachers teach in the seven elementary schools on the Leeward Coast of O'ahu and vary in teaching experience, from 3 years to over 20 years. They are of diverse ethnicities, including Hawaiian, Japanese, and Filipino.

Research Plan

The research plan focuses data collection around the following themes:

- Cultural Identity: Information is being collected on the pre-service teachers and mentor teachers' cultural identities (especially ethnicity), including their views of their own cultural identities, understandings of the significance of a teacher's cultural identity to schooling, and understandings of culturally responsive instruction, especially in classrooms with large numbers of Hawaiian children. Changes in the pre-service teachers' views of cultural identity as they progress through the program and enter the teaching profession are being monitored.
- Teaching, Learning, and Schooling: Information is being collected on the pre-service teachers' and mentor teachers' theories of teaching and learning, including the influence of their own schooling, views of effective teaching, and understanding of constructivist approaches to instruction. Changes in the pre-service teachers' views of teaching, learning, and schooling as they progress through the program and enter the teaching profession are being monitored.
- Literacy: Information is being collected on the pre-service teachers' and mentor teachers' literacy experiences, including reading/writing habits and attitudes, home/community experiences with literacy, and literacy learning in school. Changes in the pre-service teachers' understanding of literacy, literacy learning, and constructivist approaches to language arts instruction as they progress through the program and enter the teaching profession are being monitored.

Qualitative Methodology

For the first two years of this project, data are being gathered on the pre-service teachers' professional development as they take education courses, work in the classrooms of the mentor teachers, and engage in student teaching. The data sources being examined to chart their progress include life-history interviews, personal narratives, peer-coaching reports, reaction papers, teaching portfolios, literacy portfolios, weekly summaries of student-teaching experiences, and observations and videotapes of lessons. At the end of the second year, the pre-service teachers will graduate, and during the third year, data will be gathered on their first year of teaching in their own classrooms. To determine the features of an effective pre-service teacher education program, data from course syllabi, course and instructor evaluations, and mentor teacher evaluations of Ka Lama are being gathered and analyzed.

The research methodology is primarily qualitative, in keeping with a constructivist/interpretivist perspective (Guba & Lincoln, 1994). The life-history interviews follow procedures for ethnographic interviews (Spradley, 1979) and are being developed in the manner of collaborative biographies, in keeping with procedures for narrative research (Cortazzi, 1993). The pre-service teachers' written assignments are being analyzed in light of the three themes outlined above, as well as the learning goals established for the various university courses and for Ka Lama as a whole. Analysis of the content and changes in thinking reflected in these written products follows the method of constant comparison (Glaser & Strauss, 1967). Classroom observations and videotaped lessons, made while the pre-service teachers are in the program and during the first year in their own classrooms, are being analyzed using the classroom implementation checklist, an instrument validated in previous research with exemplary teachers of Hawaiian children who taught following a constructivist approach (Au & Carroll, 1997). Results are being analyzed for the pre-service teachers as a group and for the mentor teachers as a group. Detailed case studies of a number of pre-service teachers and a similar number of mentor teachers are also being developed.

An Overview of Research in Progress

Cultural Identity, Schooling, and Literacy in the Life of a Ka Lama Pre-service Teacher

This case study (Au, 1997) examined the themes of cultural identity, schooling, and literacy in the life story of Rona, a pre-service student of Samoan and Hawaiian ancestry who grew up on the Leeward Coast. The study draws on three sources of information: a life-history interview, a personal narrative, and a literacy portfolio (Au, 1998–99). Rona's cultural identity was shaped by her mother, a Samoan immigrant, who encouraged her children to learn American ways. In her life-history interview, Rona stated: "It ain't like we're putting aside the culture, no, and we're not putting down the culture, no. 'Cause we still have it here. But as far as wanting to survive, today, here, in America, we have to do it that way." In keeping with cultural values, Rona put obligations to her family above her own personal advancement. She told the interviewer: "I'm from a single parent [family] and my mom needed the help during the summer. So I couldn't have come to these educational sessions they have [to prepare high school students for college]. So, I told them, I would like to, but, you know, my family comes first."

Although not well educated herself, Rona's mother valued schooling highly. She encouraged Rona to do well in school and was always available when Rona was doing her homework. In addition to the support she received at home, Rona was inspired by her elementary school teachers and came to see teachers as important role models for students. She said, "The elementary teachers were very encouraging and really gave me a will to want to move on." In intermediate and high school, the negative experiences of her classmates made a strong impression on Rona. "The teachers weren't stable. They were either transferring to other schools or moving out of state.

So the students never really cared because maybe they got the attitude, well, the teachers don't stick around, then why should I stick around." Rona realized in college how poor the quality of her earlier schooling had been. "College was difficult because I don't know if we had proper education in high school. I don't think we were ready. I don't think we had enough academics in high school, not enough to compete."

Rona's mother could not read well but still supported Rona's literacy development. In her literacy portfolio, Rona wrote: "The first color picture book in my household was the holy Bible. I remember as a small child looking at the pictures and imagining what happened. My mother knew a few of the stories and she would tell them to me." Her mother purchased children's books but could not read these books to Rona. After she had learned to read in school, Rona read these books herself. Rona reported that, in elementary school, she had been placed in the top reading groups and enjoyed journal writing. By the time she entered Ka Lama, however, Rona's view of literacy had become an entirely functional one, and she did not read and write for her own pleasure. She felt that reading and writing "really did help me a lot. I don't think you can go far without that, not in today's world."

The case study of Rona illustrates the challenges faced by students of diverse backgrounds from the Leeward Coast and other low-income communities as they seek to become teachers. Family members may be supportive yet lack the background and skills to support students' academic learning. Students may find that their earlier schooling has not adequately prepared them to meet the demands of college courses. Even when school experiences with literacy have been positive, students may not have had the opportunity outside the classroom to develop the habits of reading and writing for their own pleasure and insight. As a result, their experiences with literacy may be narrower than those of many mainstream students. These preliminary findings all have implications for the design of teacher education programs.

Starting Blocks or Stumbling Blocks to Higher Education?
Case Studies of Native Hawaiian Women

Haas' (1992) picture of institutional racism in Hawai'i lends strong support to charges that Native Hawaiians experience conditions of injustice and inequity, particularly in the arena of higher education. University of Hawai'i statistical reports indicate a constancy in the effects of these conditions over the years (University of Hawai'i, 1996b). In response to recent demands for equity in education, research on the nature of ethnic and gender discrimination in higher education reveals several economic, social, and educational cleavages that exist among Hawaiians and academics of other ethnic groups (Mau, 1993). However, because most studies in this area report aggregate data, few examine the reasons or the subtleties behind these statistical reportings. In particular, little is known about the factors that impact the educational experiences of Native Hawaiian women.

Maaka, Au, and Luna (1998) examined the personal experiences of five Native Hawaiian women enrolled in the Ka Lama program. It focused on the supports and barriers encountered by Bernice, ʻIwalani, Moana, Puaʻala, and Sheila throughout their educations and sought information on how these elements shaped their recruitment to and progress in their pre-service teacher education program.

The participants, who varied in age (ranging from 23 to 44 years) and experiences, were asked to report on several factors identified as impacting the progress of students from groups underrepresented in higher education and to describe their perceptions and experiences. These factors are expectations of academic success; preparation for academic studies; the influence of socioeconomic status; support and encouragement received from friends, family members, and teachers; social/health issues; success in mastering the mainstream culture of the education system, especially the language of instruction, English; experiences with stereotypes and discriminatory practices; presence or absence of role models; experiences with program admissions requirements; and the ability to assimilate into the university system ("Barriers Seen," 1993). Data were collected through interviews, personal narratives, and reaction papers.

The study identified salient patterns and themes in the experiences and beliefs of these women. The following examples illustrate the wealth of information that was collected. Four of the five participants reported that, initially, they held low expectations of academic success for themselves, especially at the university level. Bernice felt that her "school work was a second priority. I had to be sure the kids took a bath and had to help cook dinner every night. I believed this was all I had to look forward to in my future. This is what I thought life was all about. I never thought of going on to higher education after graduation from high school" (personal narrative). Moana, a private school graduate, related experiences to the contrary—"I attended Kamehameha High School and we were all expected to strive for the best. At home, I was expected to do well. My grandfather always talked to me about the importance of education" (personal narrative).

The same four women felt that their preparation for academic studies at the university level was inadequate. Puaʻala believed that the "curricula developed at each school varies within each district, and whether a student enrolls in a college prep or a vocational course is determined by previous courses. Tracking students into vocational courses will not prepare them for the rigorous academic challenges of college" (personal narrative). Again, Moana related different experiences. She felt she was "well prepared for academic studies. This was due to the fact that my preparation began in the fifth grade. Also, the schools I attended always pushed students to do everything with pride" (personal narrative). Of the five participants, three reported growing up in homes where finances were limited. Sheila described her socioeconomic status as "my main barrier to higher education. I had my first child at the age of 17 and for this reason I could not go out and look for a job, and, to put it bluntly, I was poor" (personal narrative). Moana, who was raised by her grandparents, talked of an upbringing where she rarely lacked anything, especially when it came to her education (personal narrative).

When asked to relate their experiences with the stereotypical and discriminating behaviors of others, all the participants reported experiences of being discriminated against because of their ethnicity. However, the majority felt that this behavior was due more to an ignorance of other cultures rather than to malice. 'Iwalani felt that "many of the stereotypes that teachers have of their students, in my opinion, are not held to intentionally hurt people. It is more the fact that they are not educated enough to know the effects of what stereotypes can do to an individual" (personal narrative). When asked about their experiences seeking admission to the pre-service teacher education program, four of the five said they had difficulty passing the standardized admissions test. On receiving her test results, Pua'ala said that she saw her "future as a teacher—DASHED! I held that piece of paper and sat down for a moment shaking my head. I began to go over the reasons why I didn't pass. From that fateful afternoon that I received my test scores, I was practically inconsolable. I wept the entire afternoon" (personal narrative). Moana, the only one of the four who performed well on the admissions test, noted that her success stemmed from "her exposure to the 'dominant culture' through her love of reading."

The shared experiences of Bernice, 'Iwalani, Pua'ala, and Sheila add to the research on the challenges often faced by Hawaiian women as they pursue their studies in higher education. All four reported several factors that they felt hindered their progress. These included their low self-expectations of academic success, their poor preparation for academic study, their discriminatory treatment by some teachers, and their problems passing the admissions test requirement for entrance into their pre-service teacher education program. Bernice, Pua'ala, and Sheila also noted that scarce family finances added an additional hardship. Moana's more positive experiences and associated accomplishments also add to the research on Hawaiian women in education. The youngest and only one to hold a baccalaureate degree, Moana described the strong grounding she received attending a private high school and the support she received from her grandfather. As a result, she talked positively of her expectations to succeed academically and described fewer incidences of discriminatory treatment by teachers. Moana was the only one of the five who did not have problems passing the admissions test requirement for entrance into her pre-service teacher education program.

The experiences of these women are assisting the researchers' attempts to address the shortage of educators of Hawaiian ethnicity by determining how best to recruit and prepare successful teachers and how best to develop and implement a pre-service teacher education model that caters to the specific and unique needs of all children, especially children of Hawaiian and other underrepresented ethnicities.

Contributions Expected From the Research

Teachers of diverse backgrounds may contribute in significant ways to the academic success of children from similar backgrounds. There is a pressing need then, in terms of both theory and practice, for research on the lives and professional development of these teachers. Little is presently known about how teachers of diverse backgrounds understand their work, how their commitments develop over the course of their lives, or how their professional development may be fostered and sustained, in either pre-service or in-service settings.

The present project will contribute to research in the areas outlined in the review of the literature. First, contributions will be made to the literature on culturally responsive instruction. Scant information is available about the process by which pre-service teachers come to understand the concept of culturally responsive instruction and to incorporate this type of instruction in their teaching. Research is also needed on the contribution that might be made to pre-service teachers' learning by mentor teachers who are demonstrating the use of culturally responsive instruction in their own classrooms. In classrooms with Hawaiian children, two aspects of culturally responsive instruction appear particularly salient: talk story-like participation structures (Au & Mason, 1983) and peer teaching-learning interactions (Jordan, 1985). The present project will address pre-service teachers' understandings and uses of these aspects of culturally responsive instruction, along with the role that mentor teachers can play in fostering this learning.

Second, contributions will be made to research on the development of teaching expertise in the context of a pre-service program. Research on the development of expertise in the area of culturally responsive instruction has just been described. In addition, the present project will focus on pre-service teachers' knowledge and application of constructivist forms of language arts instruction. These include the process approach to writing, literature-based instruction, and portfolio assessment. Previous research has documented the specific forms of constructivist classroom organization and instruction used by teachers successful in improving the literacy achievement of Hawaiian pre-service teachers (Au & Carroll, 1997) and the process of learning followed by experienced teachers (Au & Scheu, 1996). The present project will extend this research by documenting the process of learning in a group of pre-service teachers who are attempting to understand and apply constructivist forms of language arts instruction.

Third, the present project will make contributions to research on teachers' life histories. Research will be conducted on the life histories of the pre-service teachers, with the aim of understanding how their experiences influence their professional development and how a pre-service program can make productive use of these life experiences (cf. Knowles, 1992). The life histories of the mentor teachers will also be studied. Because the majority of participants in the project are Hawaiian or Asian in ethnicity, the project will add new knowledge to the small but important body of work on the life histories of teachers of diverse backgrounds.

Finally, the present project will add to the literature on multicultural teacher education programs, particularly those characterized as multicultural and social reconstructionist. In particular, the project will look at how pre-service teachers of diverse backgrounds respond to a program with a multicultural, social reconstructionist focus and the specific ways in which this focus contributes to their professional development and success as teachers. Issues to be explored include the pre-service teachers' understandings of their own cultural identity and the cultural identities of the children with whom they work, of equity, and of the ethical and moral dimensions of teaching.

In addition to contributing to various areas of educational research, the present project can make a significant contribution to policy and practice. The project will provide information on the crucial question of how more individuals of diverse backgrounds may be attracted to the teaching profession. It will yield ideas for improving teacher education programs, by suggesting how pre-service teachers may be helped to learn about culturally responsive instruction, constructivist forms of teaching, and issues of multicultural education. The project will look at the role of mentor teachers in helping pre-service teachers learn to apply culturally responsive instruction and constructivist forms of teaching. In short, the project is expected to add new knowledge likely to be of value to those concerned with improving the education of pre-service teachers of diverse backgrounds.

In short, although nothing can be said with certainty about the program's long-term prospects, there is considerable cause for optimism at these early stages. If Ka Lama continues on its present course, its graduates may well help to improve education on the Leeward Coast. Furthermore, research on Ka Lama may contribute to the improvement of teacher education, especially for candidates from underrepresented groups.

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Douglas C. Smith, David W. Leake, and Noelani Kamekona

Creating Local Norms to Evaluate Students in a Norm-Referenced Statewide Testing Program
Sarah S. Gronna, Amelia A. Jenkins, and Selvin A. Chin-Chance

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Anna L. F. Ah Sam and Nancy B. Robinson

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Marjorie A. Jaasma and Linda S. Center-Anthony

Ka Lama o ke Kaiāulu: Research on Teacher Education for a Hawaiian Community
Kathryn H. Au and Margaret J. Maaka